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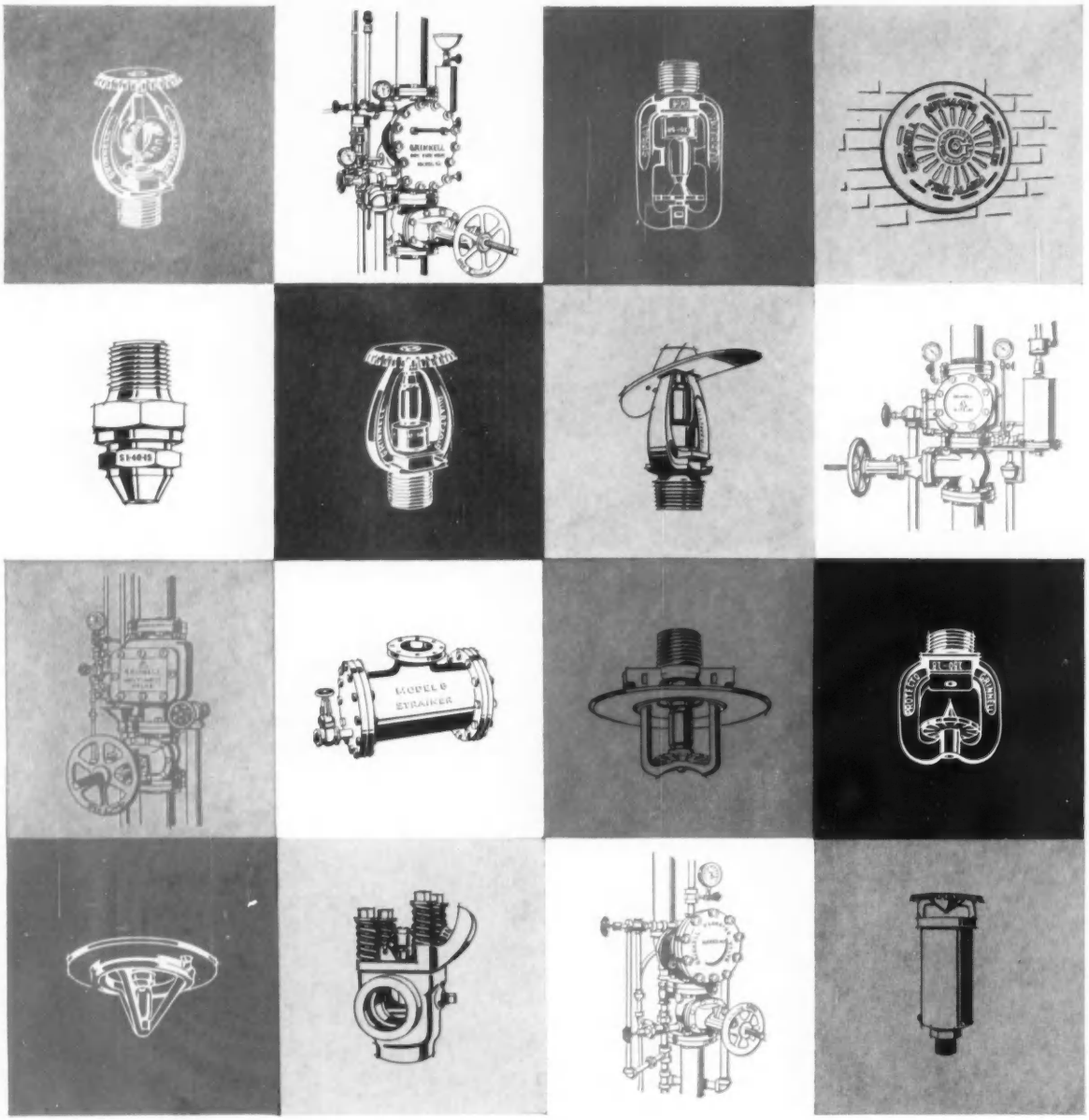

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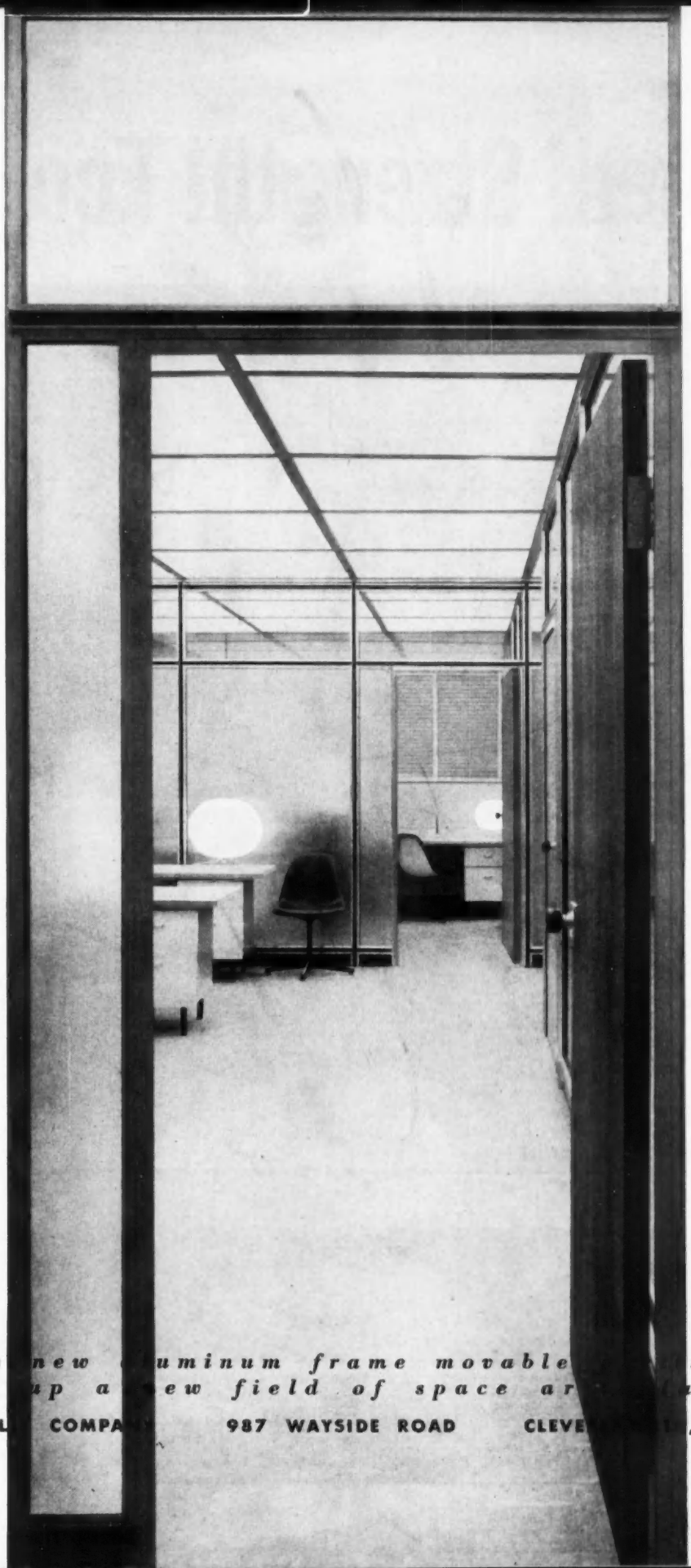

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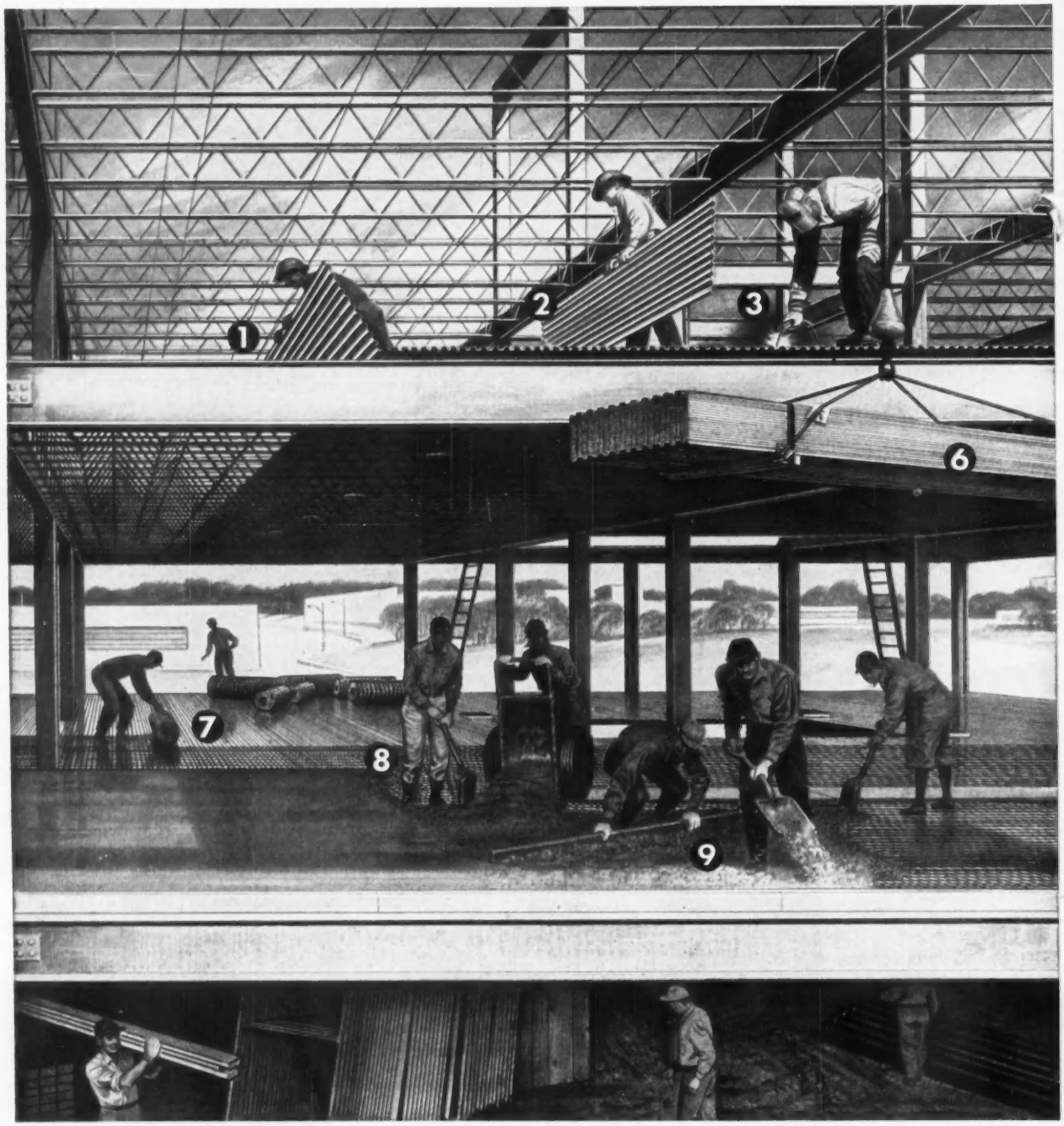

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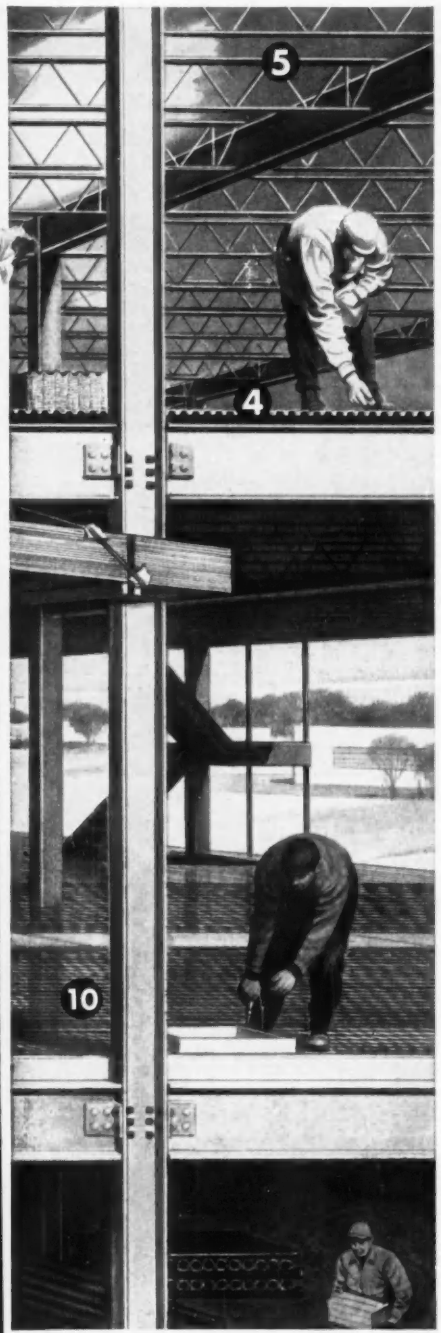

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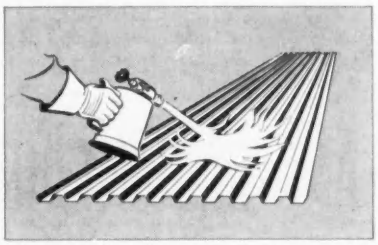

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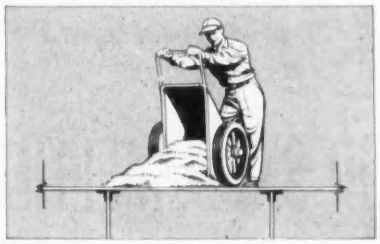

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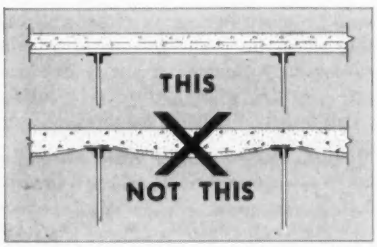

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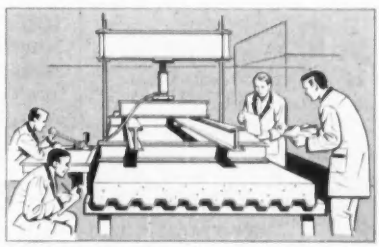

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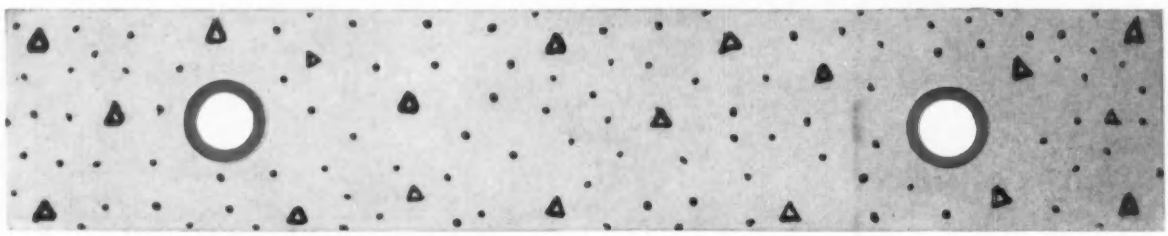

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Drawing of mosque as part of proposed scheme for University of Baghdad. The Architects Collaborative.

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Coming in the Record

IMAGE OF THE ARCHITECT

More and more discussions in architectural circles, and in conventions, turn to the role of the architect in the world of atomic energy and moon missles and crash programs in research and design. Maybe, the talk goes, the architect needs to appear in a larger image, to broaden his services and his competences, to fit himself completely for the responsibilities being thrust upon him. Soon to start is a series of inquiries into the whole subject of the architect's functions.

WATER, WATER

Last year Elizabeth Kassler authored a couple of sparkling pieces on working water into designs for architectural effect, which architects seemed to enjoy thoroughly. Now that spring is breaking out all over, Mrs. Kassler is breaking out again with a couple of new features on man's cleverness through the ages with water in his architecture.

WATER—FOUNTAINS

Know how to design a fountain? Where there's water there's likely to be a fountain, and there will certainly be problems of design, of piping, of equipment. So while we're on the water kick we'll tell you about the fountains, not forgetting to add in some Time-Saver Standards to complete the data.

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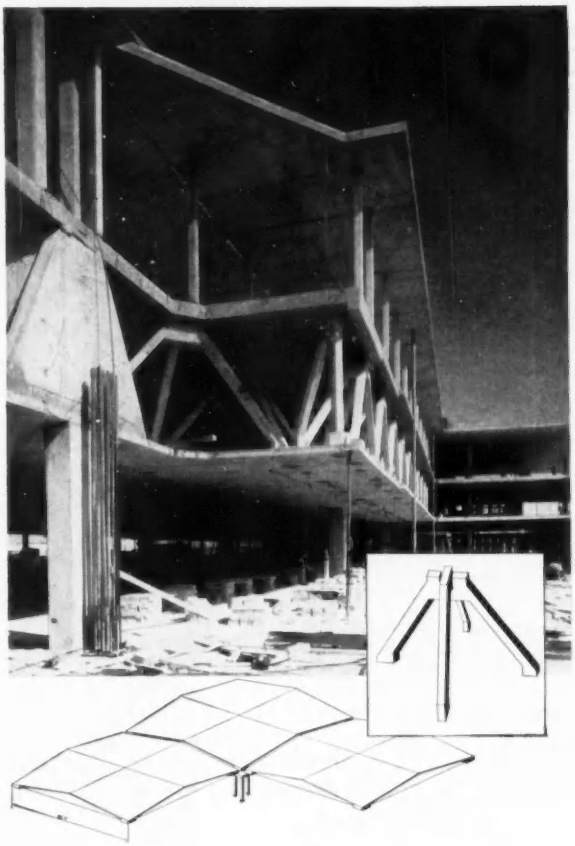
The space frame—located between the administration-engineering floor below and the manufacturing floor above—acts like a giant, three-dimensional truss. Nine feet high and braced by slender, precast tetrapods, this rigid frame permits large 63-ft. bay areas on both floors, and contains all the pipelines which supply some three dozen utilities to any part of either floor through approximately 3,000 access holes.

The thin-shell concrete roof is formed of cast-in-place hyperbolic paraboloid sections—permitting exceptionally large, well-lighted areas with a minimum of columns, and producing a versatile structure which can readily be expanded in any direction by adding similar units.

The total result of this imaginative use of modern materials and methods was a quickly-erected, readily expandable structure with an easy, open atmosphere far removed from the dark factories of the past.



HYPERBOLIC PARABOLOID roof sections are composed of warped thin-shell slabs, cast in place. V-TETRAPODS (above) are four-footed diagonal supports for space frame, precast at the site. Concrete met specified strengths up to 5000 psi.

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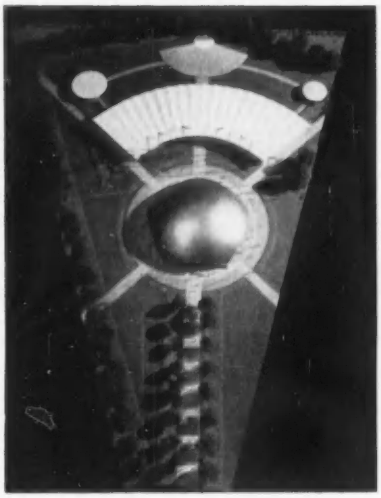
DURCON SINKS DURCON SINKS DURCON SINKS

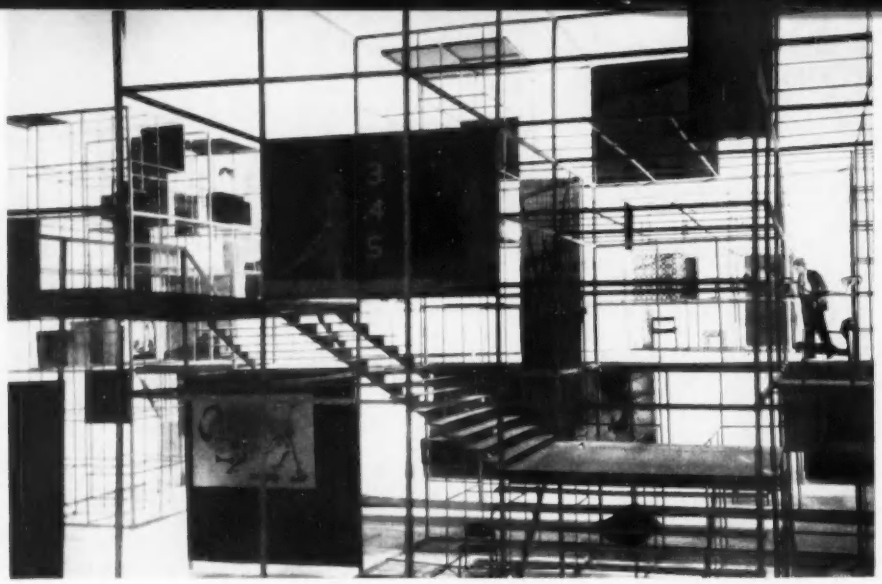
A.I.A. Gold Medal for Gropius

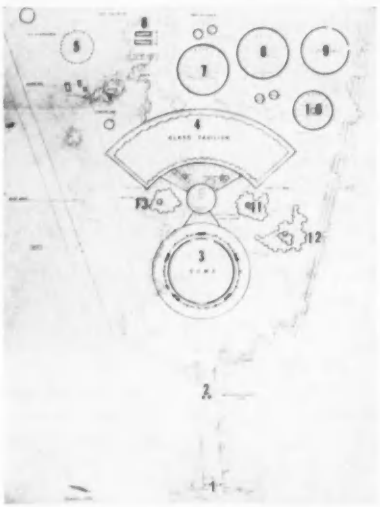
Walter Gropius, architect, teacher and philosopher, will receive the 1959 Gold Medal of the American Institute of Architects. Professor Gropius, who became a significant leader of the modern movement in architecture when he founded the Bauhaus school of applied arts in Germany just after World War I, has made an equal contribution in this country as a teacher—as dean of the Harvard Graduate School of Design—and as an architect, in the work of the firm he founded, The Architects Collaborative (see pages 147-162). Although Professor Gropius, now 75, has suffered much at the hands of wildly differing interpreters and imitators, he has always himself remained faithful to the philosophy he stated so eloquently when he first came to this country in 1937: "You may want to hear from me what sort of contribution I wish to make to the development of American architecture," he said in a talk at the Architectural League of New York, "and it may seem rather odd to you that I turn up here to teach Americans what American architecture should be like. I assure you I feel pretty certain that I shall be a pupil here as well as a teacher, and I am very keen to take over this double function. My intention is not to introduce a, so to speak, cut and dried 'Modern Style' from Europe, but rather to introduce a *method of approach* which allows one to tackle a problem according to its peculiar conditions. I want a young architect to be able to find his way in whatever circumstances; I want him independently to create true genuine forms out of the technical, economic and social conditions in which he finds himself, instead of imposing a learned formula onto surroundings which may call for an entirely different solution. It is not so much a ready-made dogma that I want to teach, but an attitude towards the problems of our generation which is unbiased, original and elastic. It would be an absolute horror for me if my appointment [at Harvard] would result in the multiplication of a fixed idea of 'Gropius architecture.' What I do want is to make young people realize how inexhaustible the means of creation are if they make use of the innumerable products of our age, and to encourage these young people in finding their own solutions."

The Human World of Nervi

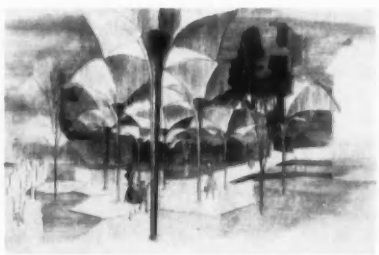
Some moving testimony as to what architect-engineer collaboration can be was heard last month in the remarks by Marcel Breuer at the opening of the Architectural League of New York's great exhibit of the work of Nervi (see page 20). Speaking of their collaboration on the UNESCO Headquarters in Paris, Mr. Breuer said, in part: "Despite the imagination which he quietly manifested, and despite his experience and great theoretical knowledge, Nervi showed an unusual elasticity in our contact. This has to be explained, because it was far from the passive elasticity of these structural consultants who put a beam under wherever a load appears—move the support a bit to the right or to the left, if it is in the way—who fight stress with mass, deflection with oversized cross-section. Nervi's elasticity is quite different. While he absorbs even rather basic suggestions related to the structure and accepts the requirements of the plan, his participation is a continuous search for a system: a system of geometric rhythm. Structure transcends here the bounds of sheer necessity without sacrificing any of the logic of its usefulness or even of its economy. The structure of the UNESCO project was, in its basic conception, simultaneously developed with the plan. Though our individual responsibilities were automatically assigned, there was very thorough and continuous exchange of ideas and opinions between us. . . . As I see it in retrospect, there are three qualities in Nervi which made our association most interesting for me: 1. A vision of geometry, which impressed me still more than the vocabulary deriving from his research in reinforced concrete. A control of geometry makes it possible for him to follow the flow of structural stresses, to turn and twist with them, to follow them into space but always under continuous reference to the plans of geometric projection and per consequence under continuous reference to a crystallized form. 2. A razor-sharp analysis of stresses working in the structure and his face-to-face meeting these stresses in a corresponding structural system,—in an organic system. Now, organic is not a catchword here, nothing metaphysical or nebulous, nothing of an excuse. It is a flow as real as the continuous strain starting in the shoulder, moving through the upper and lower arm, into the grip of the hand, fingers and thumb. This is the real world of Nervi, the continuous stresses, branching from support into girders, dividing into ribs and into the very fibers of the structure, to combine again into ribs and columns. 3. If there is a notion that arrogance and reckless irresponsibility are the very vehicle of genius, a notion that one must be unhuman to be a genius, there is Nervi to manifest how wrong this notion is. I came to know him as a modest, even humble man, though he is by no means unaware of happenings around him. I cannot help but feel that humanity is a prerequisite of the architect, of the designer, too. As I use the word humanity here,—and I am all too conscious about misinterpretations it may cause—I have to emphasize that no sentimentality, no romantic prettiness, is involved. However, the monumentality will not be an empty one, the symmetry will not be a designed one, the economy will not be a *l'art pour l'art* one, the courage will not be an irresponsible one. Form will not be showmanship, but FORM; imagination will not be acrobatic, but a logical and visual discovery. Some of our great talents just miss to be really great: their shortcomings can be traced back to human shortcomings, in man and his work. It seems to me that Nervi's work expresses humanity." . . . And on the same occasion, John Ely Burchard, dean of the School of Humanities and Social Studies of M.I.T. (and consulting editor of ARCHITECTURAL RECORD), apostrophized Nervi: "To American architects you offer the same lessons as are to be found with different examples on the current Japanese scene. Where technique is used as a part of natural life or a part of mankind, it flowers; but where, as in the American baroque, technique is simply adopted as a means of revealing a sought-for expression both the expression and the technique will be corrupted. Your restraint reminds that exuberant structuralism and the unrestrained display of virtuosic talent may be 'all to the advantage of the techniques but derogatory to design.' And above all your work proclaims 'never force the purpose to the method.' Instead, it echoes another of Poincaré's maxims: "Architectural beauty is that in which the architect employs methods which suit his purpose!' You have never been guilty of employing the unsuitable engineering form because of its novelty or because of its drama, or just because you happened to be in love with it."



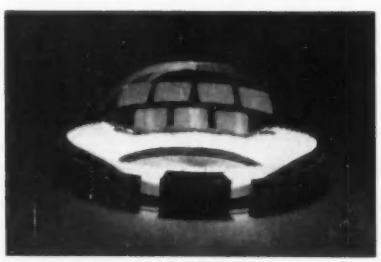




Above, left: A preliminary model of the exhibition (AR, Feb. '59, p. 10) showing the permanent buildings designed by Welton Becket & Associates. The Kaiser geodesic dome, following the principles of R. Buckminster Fuller, is being erected by the Lydick Roofing Co.; the fan-shaped exhibition hall is being put up by the Reynolds-Feal Corp. *Left:* The final site plan includes changes in the walkways and the addition of the three-part plastic pavilion. 1. Entrance; 2. American and Soviet flags; 3. Dome, 200 ft in diam, 78 ft high; 4. Pavilion, glassed front and rear, 50,000 sq ft, 28 ft high; 5. Playground; 6. "Splitnik" house; 7 and 8. General Motors and Chrysler pavilions; 9. Circarama; 10. Ford pavilion; 11, 12, and 13. Plastic-roofed pavilions to contain, respectively, the "Family of Man" and architectural exhibits and a demonstration of typical clothing. *Above:* Part of a model of the two-level "jungle-gym" exhibit structure to be housed in the glass pavilion; it will have a steel frame and carpeted steel decking



Above: A sketch of the interior of one of the plastic pavilions; there are to be a total of 70 off-white interlocked hexagon-shaped sections, each supported by a 16-ft plastic column, hollow for rain drainage. *Left, above:* Charles Eames, left, and George Nelson conferring about Mr. Eames' plan for seven simultaneous movies. *Left, below:* Model of the dome with movie screens. *Below:* Rendering of the "Splitnik," 1144-sq-ft house so called because it is to be split by a 10-ft-wide gallery to allow huge crowds to go through it



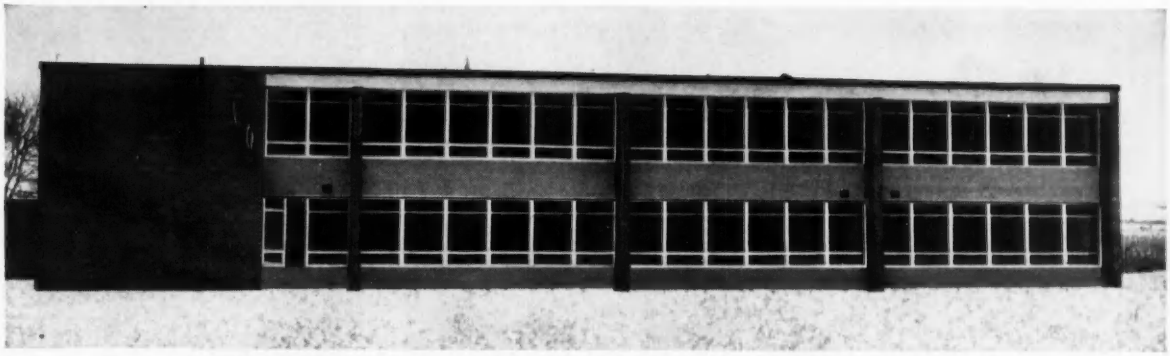
The U.S. Exhibition in Moscow: A Large Design Challenge

Construction is being hurried along on the American National Exhibition in Moscow, the first full-scale United States exhibition ever to be shown in the Soviet Union. (See also p. 44). Sponsored by the U.S. Government in cooperation with private industry, the exhibition is scheduled to open on July 25 in Sokolniki Park and to run six weeks. It is expected that well over 3.5 million Russians will see the exhibits.

George Nelson and Company, Inc., New York industrial designers, is the firm that has been selected not only to design all exhibits and displays, but also to make final decisions on all exhibits. Among the major design contributions of the firm (headed by Mr. Nelson, an architect) are the 'jungle-gym" exhibit structure, above, and the three-part reinforced plastic pavilion, right. The firm is sending a five-part brass scale model of the "jungle gym," keyed to assembly drawings, as a construction "blue print."

The plastic pavilions are to shelter not only exhibits but also pools, fountains, and outdoor sculpture. Consulting engineer on them was Albert G. H. Dietz of M.I.T.; Lunn Laminates, Inc., is the builder. The architectural exhibit in one pavilion, emphasizing large single-point perspective photographs, is being selected and arranged by architects Peter Blake and Julian Neski.

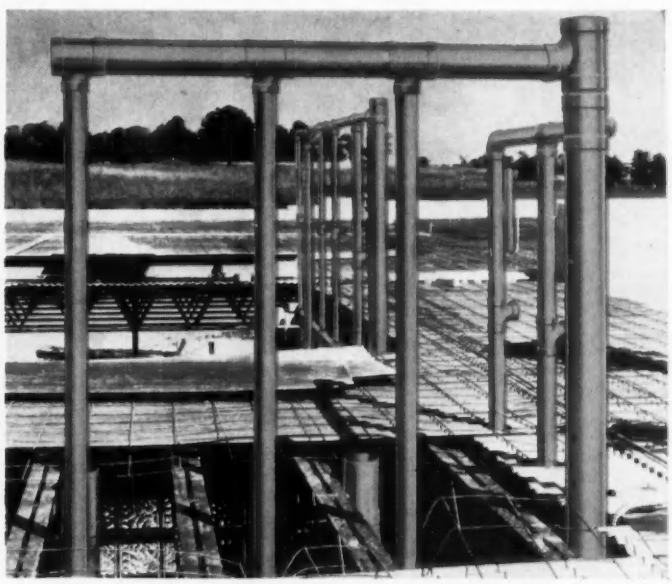
The "Splitnik" house, designed by architect Stanley H. Klein, was chosen as a "typical American house" that the average worker can buy. Its builder, All-State Properties, Inc., is partially prefabricating it here.



GOWER SCHOOL ADDITION, Hinsdale, Illinois. *Architect:* Wight & Schlaebitz, Downers Grove, Illinois.
Plumbing and heating contractor: Jerry & Phil's Plumbing & Heating, Inc., Brookfield, Illinois.

SUPERIOR ALL-COPPER PLUMBING IN THIS SCHOOL AT LOWER COST TO TAXPAYERS

COPPER SANITARY DRAINAGE LINES roughed-in among structural members at Gower School. This space-saving installation would have been impracticable with heavy, bulky pipe requiring threaded or caulked joints.



COPPER SANITARY DRAINAGE LINES for second floor lavatories at the Gower School. Light weight of copper tube and ease of making solder joints save many dollars on multiple installations like this. Compact assemblies eliminate wide plumbing walls, give greater usable floor area.

Phil Bergeron and Jerry Wehrmeister, plumbing contractors near Chicago, have found that the installation economies with copper tube and solder-joint fittings enable them to offer all-copper plumbing—water supply *and* sanitary drainage—at a cost lower than competitive bids based on installing ferrous piping. Recent jobs awarded to them as low bidder include the Gower School, the LaGrange Township Junior High School, a church, health center, two restaurants and a store. Anaconda was used for all these jobs. Phil Bergeron says, "We specify Anaconda Copper Tube and Fittings because their consistent fine quality and close tolerances makes our work easier and keeps the job costs within our estimates."

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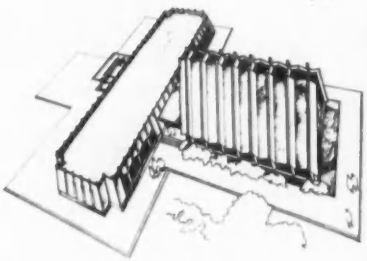

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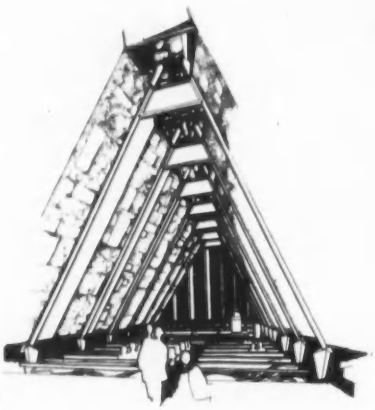

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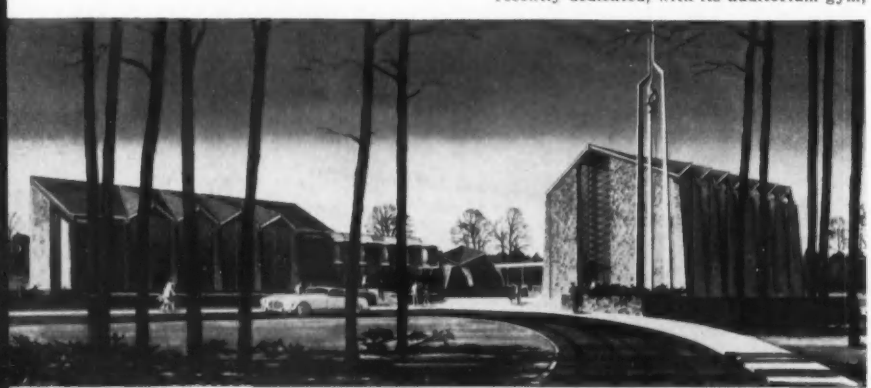
1. "The Celanese House," approaching completion in New Canaan, Conn., was commissioned by the Celanese Corp. of America as a showcase for its fabrics. The living area has about 2500 sq ft; each of the 12 seven-ft-high pyramids is topped by a glass cap. Edward D. Stone, architect; Theodore DeF. Hobbs, builder. 2. London's tallest commercial building will have a 31-story tower and about 350,000 sq ft of office space. The reinforced concrete structures are being built by the Legal & General Assurance Society, Ltd. Cost: $14 million. Ronald Ward & Partners, architects. 3 and 4. The planned Protestant Chapel at New York International Airport, with 35-ft-high nave, will cost $250,000. Edgar Tafel, architect. 5. The $6.2-million New York School of Printing, recently dedicated, with its auditorium-gym, left, and seven-story classroom-shop building. The 327,000-sq-ft school has glass-block walls. Kelly & Gruzen, architects; Caristo Construction Co., general contractor. 6. The Gloria Dei Evangelical Lutheran Church, Bethayres, Pa., to be built in stages, will eventually include fellowship hall, classroom building, chapel, sanctuary. Vincent G. Kling, architect. 7. Webb & Knapp plans to build "The Central City," an office building that may provide more than 5,000,000 sq ft, in New York, dovetailing with the proposed Crosstown Expressway. The U.S. Post Office has agreed to rent 500,000-1,000,000 sq ft. I. M. Pei & Associates, architects; Kahn & Jacobs, associate architects; Andrews & Clark and Charles Meyer, structural engineers; Jaros, Baum & Bolles, mechanical engineers



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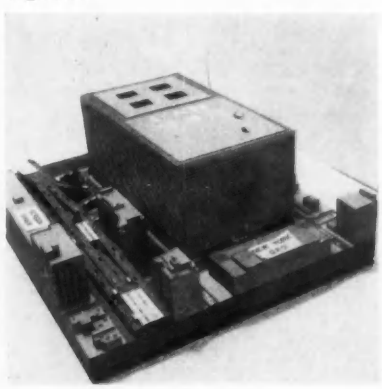

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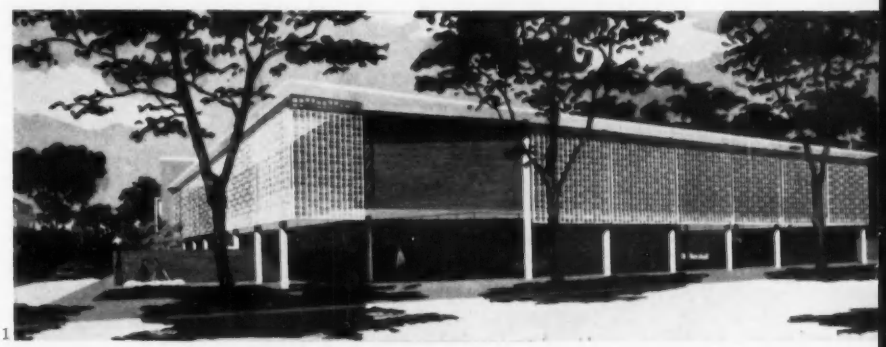
1. The Loeb Drama Center for Harvard and Radcliffe will be red brick and glass with white screening. The main auditorium is convertible to Elizabethan theater, proscenium type, or theater in the round; it seats 515. There are also a 100-seat theater, library, and classrooms. The structure is 24 ft high with a small central shaft. Hugh A. Stubbins & Associates, architects; George A. Fuller Co., general contractor. 2. Plans for a Federal Building for the 50th state have recently been accepted by the GSA. The $801,000 structure in Wailuku, Maui, Hawaii, has aggregate and granite and quartz facing, with glazed units on the stair tower. Law & Wilson, architects. 3. A proposed prototype elementary school and shelter for mass protection from radioactive fallout is precast concrete with a folded roof of the same material. The circular school is below ground level with three ft of earth on the roof. The glass-walled nine classrooms open onto a 10-ft walk bordered by an eight-foot ring of water. After radioactivity had subsided, the ceramic tile retaining walls, ramps, walks, and classroom walls could be hosed down, with contaminated water draining into the pool for filtering and recirculation. The design evolved from a study project of the committee on nuclear energy of the Northern California Chapter, A.I.A. Albert Sigal, Jr., architect. 4 and 5. Precast concrete arches with a clear span of 154 ft frame this hexagonal hiring hall-auditorium for San Francisco's Local 10, Longshoremen's Union. The precast concrete roof panels are sheathed in copper. Henry Hill, architect, John W. Kruse, associate; Isadore Thompson, structural engineer; Jacks & Irvine, general contractor



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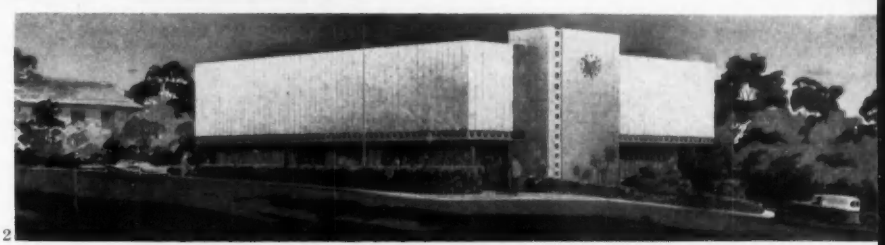

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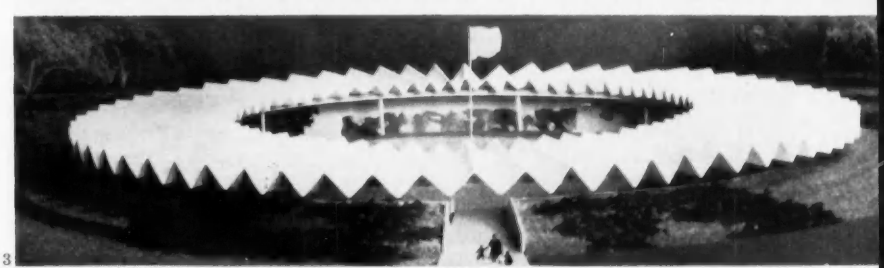

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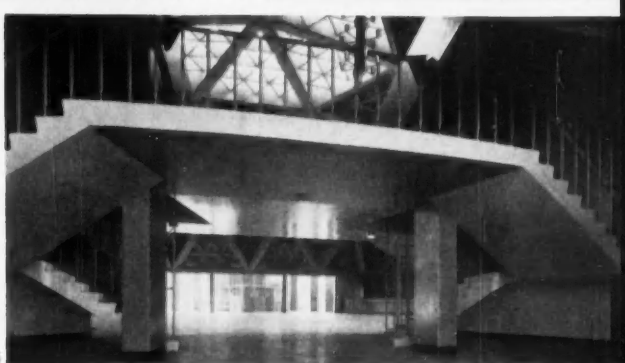

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6. The 14-story American Hospital Association Building in Chicago has 144,446 habitable sq ft. It is of steel skeleton construction with anodized aluminum window walls and white glazed brick. Schmidt, Garden & Erikson, architects; Sumner Sollitt Co., general contractor. 7. The $6.5-million, 12-story Nile Hilton in Cairo was opened in February. Owned by the Egyptian Misr Hotels Co., it has been leased to Hilton Hotels International for 20 years. There are 400 rooms; total usable sq ft: 533,900. The reinforced concrete structure, shaped like an open V, gives views of the city, river, and Great Pyramids. Over the main entrance is a 280-by-25-ft Venetian glass, mosaic tile mural designed by the architects from ancient Egyptian symbols. Welton Becket & Associates, architects

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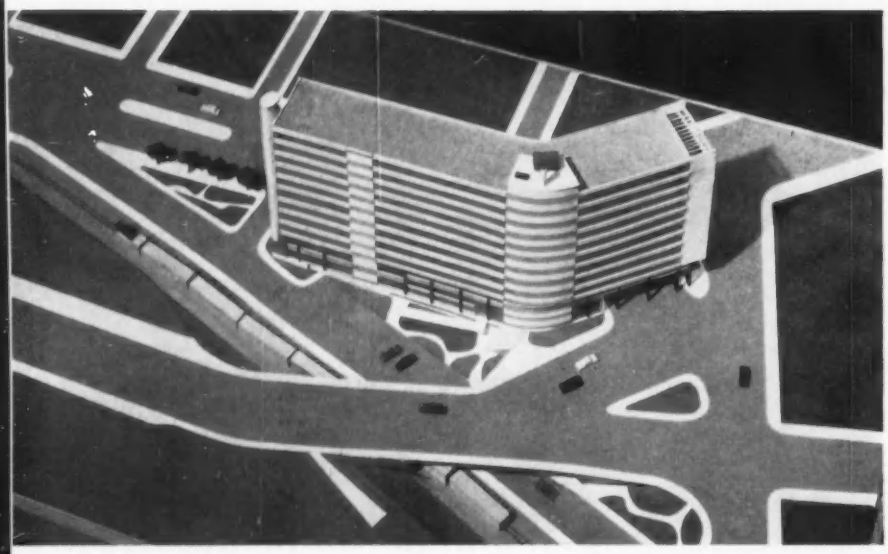
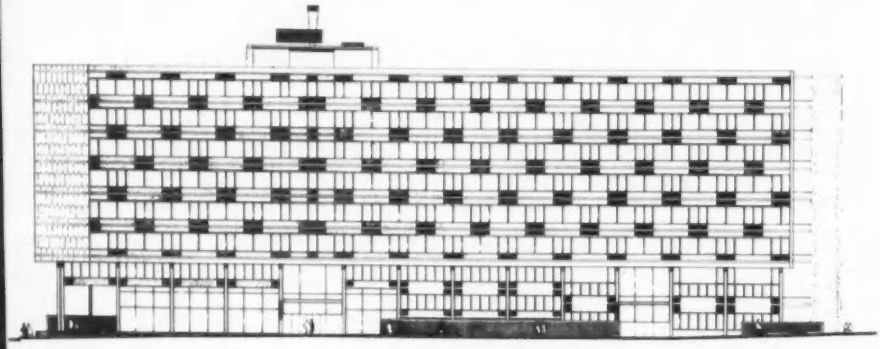
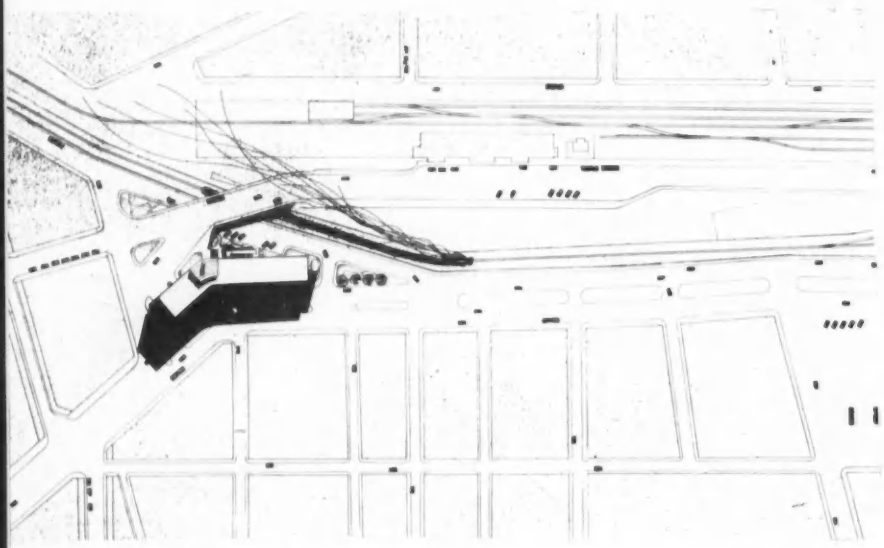






M.I.T. Graduate and Partner Win Greek Competition

Winner of the first prize in a Greek competition for the National Railroads Office Building in Athens was this structure entered by the partners Thymio Papayannis and Stheni Molfessis, young Greek architects trained, respectively, at M.I.T. and the Ecole des Beaux-Arts. Construction is scheduled to start in July.

The jury consisted of E. Vekris, general director, Greek Railroads; E. Roussopoulos, professor of architecture, Athens National Technical University; K. Zoukis, architect, Ministry of Public Works; K. Georgiadis, architect appointed by the Technical Chamber of Greece; and B. Costeas, director of the Railroads division of studies and construction.

The program specified services and offices to be provided in the building, as well as floor space requirements to be met within 10 per cent. It also called for a study of the site and the replanning of surrounding streets and railroad lines.

The 12-story building is in plan a bent rectangle about 300 by 47 ft. Its structure is prestressed reinforced concrete with a continuous 6-in. slab throughout reinforced by prestressed bands at 120 deg to each other. The basic module is 10 by 20 ft. The skin is glass with aluminum fixed and pivoted windows, aluminum vents, and concrete panels. The east and west elevations have aluminum and polyester sunshields. Floors are marble and terrazzo. There is complete air conditioning.

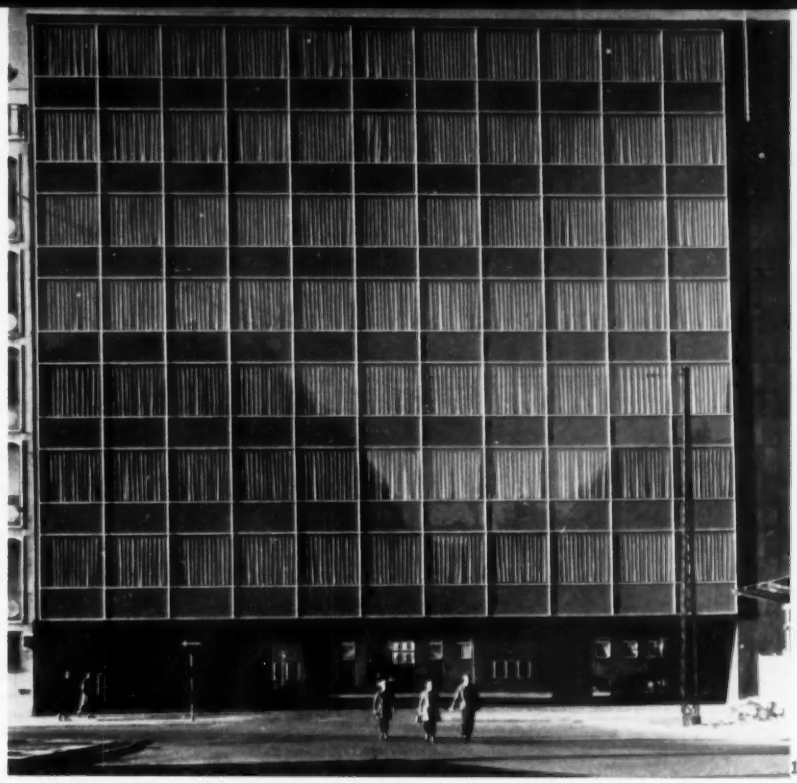
The jury approved both the modification of the site and the pianning and appearance of the building.

Jacobsen Exhibit at R.I.B.A.: Report from England

The exhibition of the work of the Danish architect, Arne Jacobsen, that was held recently at the Royal Institute of British Architects in London provided a unique opportunity to evaluate the production of a highly gifted and significant artist. Designed by Professor Jacobsen himself, the exhibit covered his work from the early 1930's through models of buildings still under construction. It also included Jacobsen-designed furniture, textiles, and other examples of the applied arts. The total impression was of a remarkably consistent mode of design: intellectual, highly rationalized, and combined with an impeccable standard of finish.

The exhibit acquired a curious topicality with the news that Jacobsen will probably design the new buildings for Oxford's St. Catherine's College. The selection of a foreign architect for this most English of English commissions has been widely interpreted as an indictment of the entire English architectural profession, touching off a staid storm of controversy in the correspondence columns of the *Times*.

—*Jonathan Barnett*



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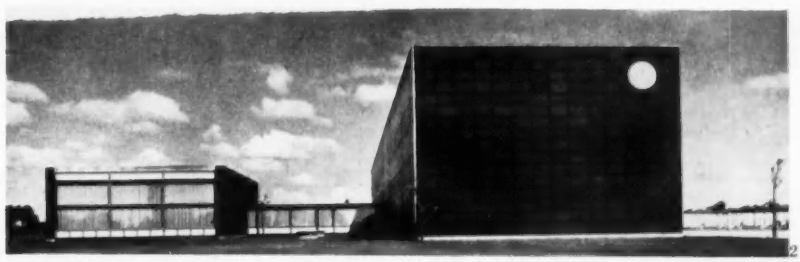

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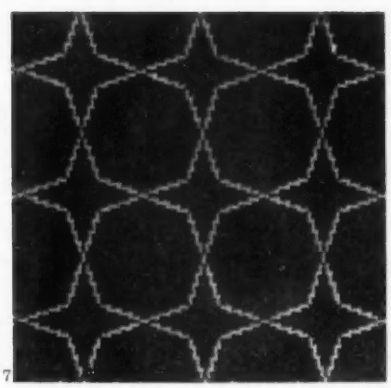

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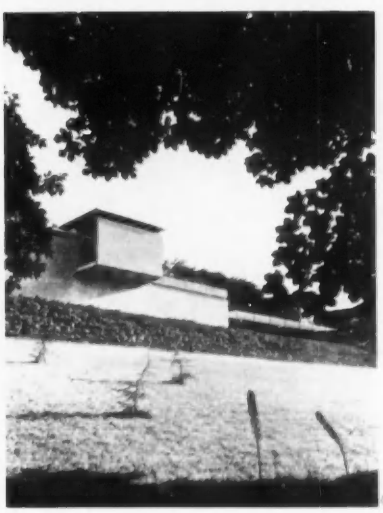

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1. Office building for A. Jespersen & Son, Copenhagen; 2. Town Hall, Rodovre, Denmark (AR, Sep. '57, pp. 187-192); 3. House for Ruthwen Jurgensen, Vedbek, Denmark; 4. House for Edwin Jensen, Mosehojvej, Denmark

5. Swedish marble drinking fountain, Munkegard School, Gentofte, Denmark; 6. "The Egg," swivel chair designed for the Danish manufacturer, Fritz Hansen; 7. Wilton carpeting designed for S. A. S. Hotel and Air Terminal, Copenhagen

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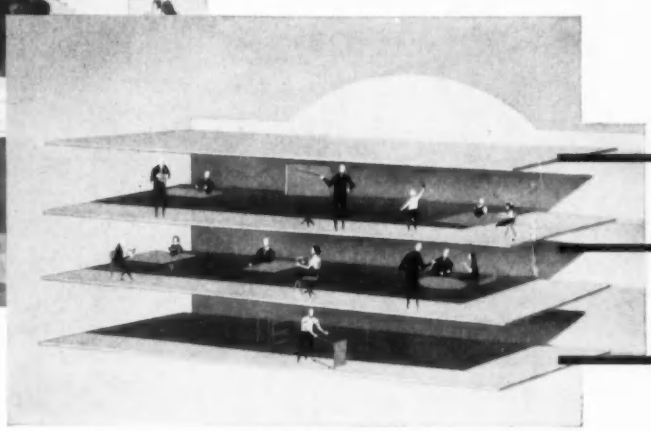

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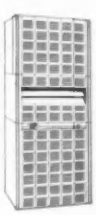

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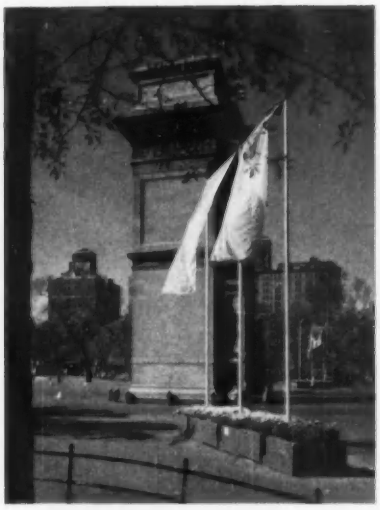
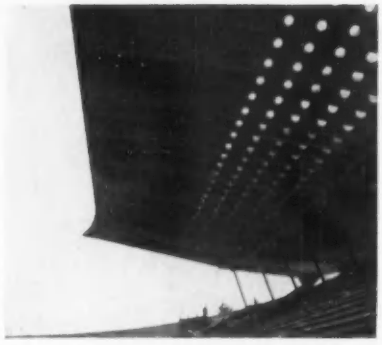
FIVE ARCHITECTURAL LEAGUE EXHIBITS TO BE SHOWN BY A.F.A.

Below: "Engineering: The Work of Pier Luigi Nervi" is the current exhibit (March 26-April 17). Signor Nervi, who prepared material for it, accepted the League's invitation to come to this country for the opening, but illness canceled his plans. The principal speakers were John E. Burchard, dean, School of Humanities, M.I.T., and consulting editor, ARCHITECTURAL RECORD, and architect Marcel Breuer. C. Mortimer Throop, League vice president for engineering, was moderator. Shown is the Flaminio Stadium, Rome (AR, Dec. '58, pp. 107-118). *Right:* Two examples from the "Street Furniture" exhibit last fall. Morris Ketchum, Jr., Louis Kahn, William Ballard, Henry Hope Reed, and James Marston Fitch spoke

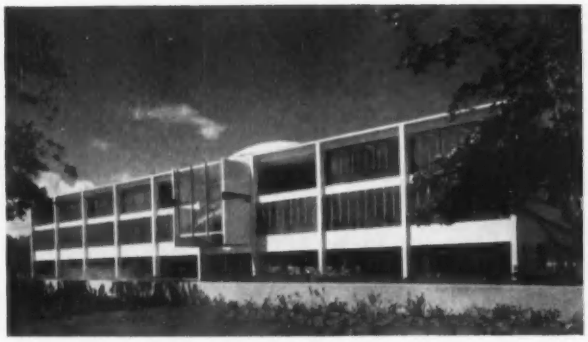




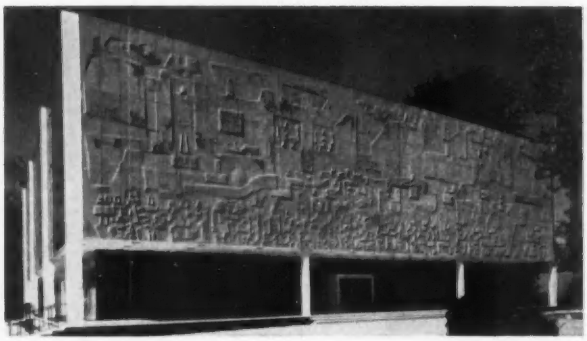
The Architectural League of New York, under its current president, Morris Ketchum, Jr., is sponsoring this year a series of programs that express with new vitality the continuing object of the League: "to quicken and encourage the development of the art of architecture, the arts and crafts, and to unite in fellowship the practitioners of these arts and crafts, to the end that ever-improving leadership may be developed for the nation's service."

Five of the year's exhibits—noted on this page—have been selected for circulation throughout the country by the American Federation of Arts (1083 Fifth Ave., New York 28).

The League, founded in 1881, now has almost 600 members, 250 of them architects and the others landscape architects, engineers, sculptors, mural painters, and designers and craftsmen. The League's membership is worldwide, with some 130 members outside New York.

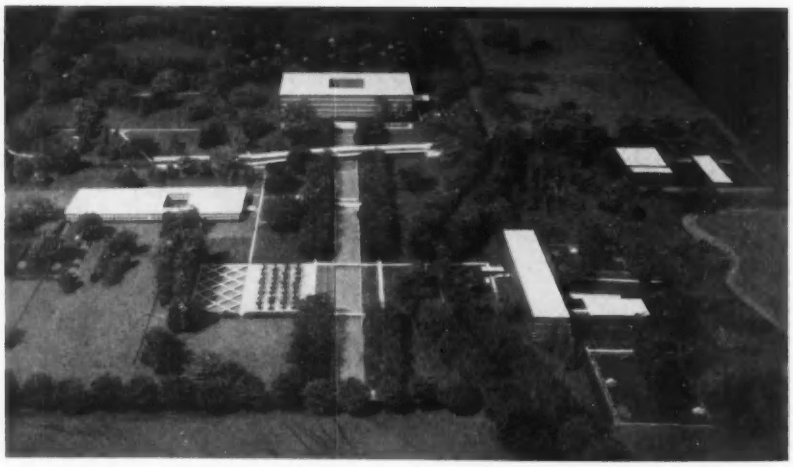


"Architecture: Puerto Rico, Old and New" is another recent exhibit selected by the American Federation of Arts for circulation. Moderator of the program was José Fernandez, League vice president for architecture. The exhibit went on display last month at the University of Puerto Rico. Shown is the Supreme Court of Puerto Rico; Toro-Ferrer, architects

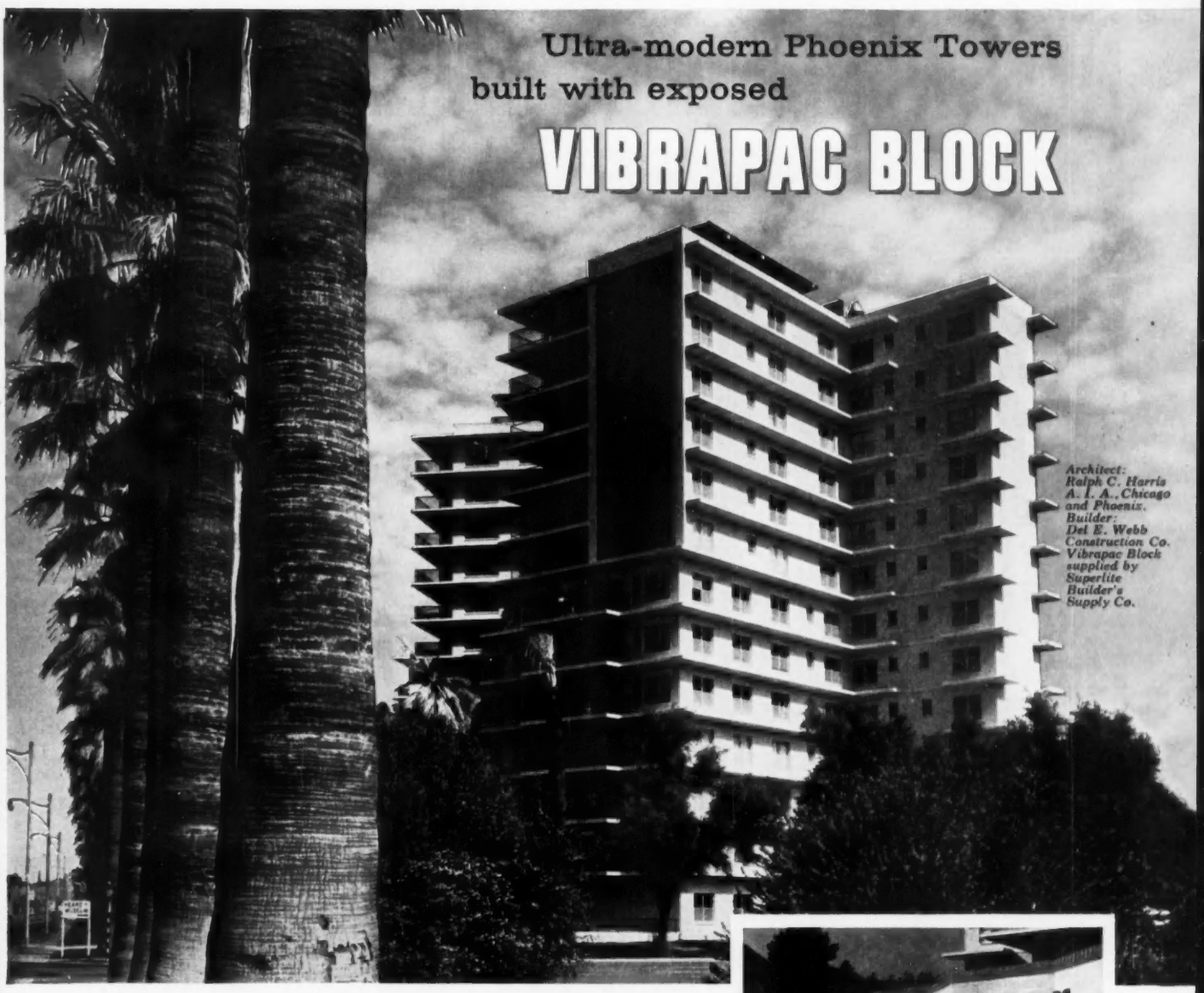


"Sculpture: The Work of Constantino Nivola" (AR, Jan. '59, p. 20) was marked by a program moderated by Frank Eliscu, League vice president for sculpture, at which Paul Nelson was principal speaker. Shown is Signor Nivola's 120-by-30-ft sand mural for the headquarters building of the Mutual of Hartford Insurance Company; Sherwood, Mills & Smith, architects

Right: "Landscape Design: The Work of Dan Kiley" is exemplified by Mr. Kiley's model of the Union Carbide plant near New York; Skidmore, Owings & Merrill, architects. Moderator of the January program was Janet Darling Webel, League vice president for landscape design. Speakers included Ian McHarg, chairman, School of Landscape Architecture, University of Pennsylvania; Walter Netsch, S.O.M. partner; Louis Kahn; Frederick Gutheim. Some of Mr. Kiley's other recent projects are designs for the Air Force Academy, Detroit Civic Center, Jefferson Memorial in St. Louis, Rockefeller Institute for Medical Research in New York, and Kitimat, a new town in British Columbia



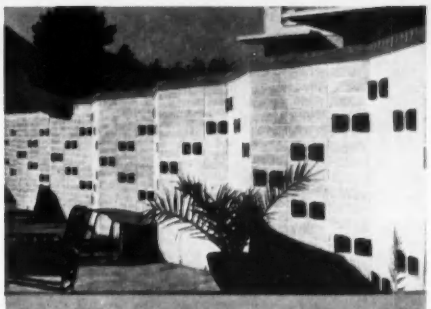
a Skyscraper of Ranch Homes



Now — you can live in luxury 5 minutes from the heart of Phoenix. The new, magnificently conceived Phoenix Towers is literally a skyscraper of air-conditioned ranch homes, each affording a gorgeous view of sunny Arizona's mountain and desert grandeur.

Phoenix Towers is all Vibrapac Block constructed. Exposed, lightweight units, for both exterior and interior walls, provide a high degree of insulating and soundproofing qualities, as well as fire-safety and storm-safety. Residents have the advantage of living in a beautiful suburban home located in a busy metropolitan area.

Yes — you can build better with Vibrapac Block, the modern building material. Numerous styles and sizes, interesting textures, and distinctive color tones challenge both architects and builders in achieving beauty and permanence. Write for chart showing 50 block wall patterns available. No obligation.



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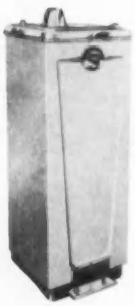
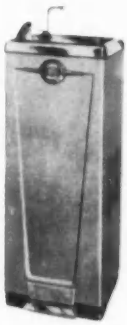
NEW WESTINGHOUSE "WALL LINE"

There's a new 1959 Westinghouse Water Cooler

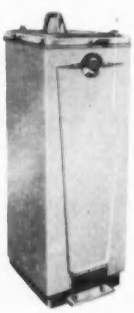
Bottle Models—standard, Hot and Cold, Cooleret, compartment. No plumbing required.



Water-Cooled Models for extra-heavy duty locations and high traffic demands.



Hot and Cold Models for quick coffee-breaks and cold refreshment right on the job.



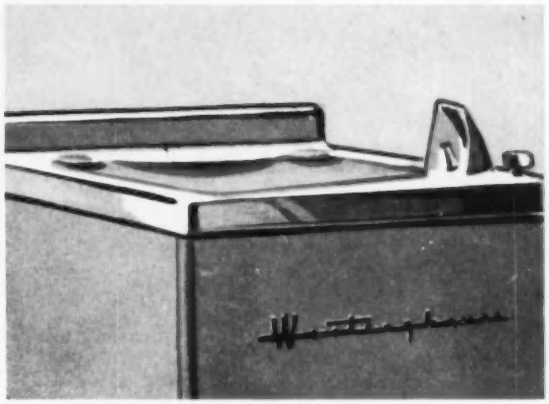
Explosion-Proof Models for hazardous locations—chemical plants, oil refineries, etc.

Cooleret Models for smaller offices, stores, laboratories, homes.

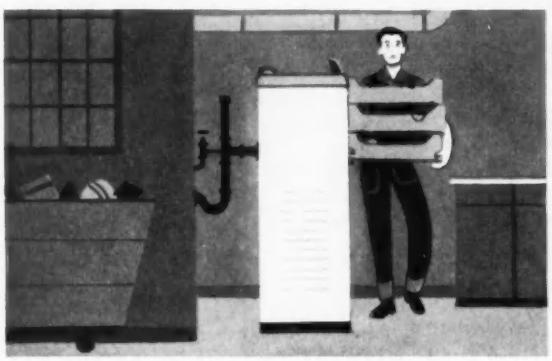
ENDS UNSIGHTLY PLUMBING!

1800 leading architects and consulting engineers asked for it in a nationwide survey—so Westinghouse built it! Built a water cooler that (1) conceals *all* plumbing and (2) takes up less floor space. The new Westinghouse "Wall Line" fits flush to the wall—actually protrudes 30% less into passageways. That's because all unsightly plumbing is inside the cabinet . . . and there's no space in back to catch dirt and trash. Installs faster, easier.

Get all the facts. Call your Westinghouse Distributor listed under "Water Coolers" in the Yellow Pages. Ask about the *special* Westinghouse offer for architects. Westinghouse Water Coolers—biggest selling brand everywhere—rented most anywhere.



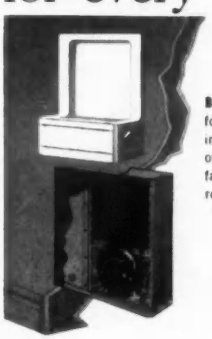
All-new inside and out!
Exclusive high backsplasher, dual drink control, stainless-steel top, free-flow water valve.



Other water coolers jut way out
into passageways—18 to 22 inches from wall due to exposed plumbing.

New Westinghouse "Wall Line"
fits flush to the wall! Only 12½ inches deep because all plumbing's *inside!*

for every need!



Built-in Models for schools, institutions, offices, factories, restaurants.

Compartment Models for medical offices, labs, stores, other offices.

YOU CAN BE SURE...IF IT'S

Westinghouse

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Water Cooler Dept., Springfield 2, Mass.

How SHEPARD ELEVATORS took the bite out of gear tooth wear

The worm gear... heart of traction elevator machines... really isn't complicated. It looks and operates just like any other machine's gearing.

But years ago Shepard Elevator Co. discovered a flaw in standard worm gear machining practice. Uncontrollable minor imperfections in the tools used produced high spots on certain teeth. This hastened wear, caused some vibration and lowered operating efficiency.

Shepard solves the problem

The solution, while not easily arrived at, was basically simple. By changing the number of gear teeth the engineers were able to compensate for cutting tool faults and produce a perfectly uniform gear.

This, combined with other manufacturing and design improvements, resulted in a worm gear that gives unmatched operating efficiency, and almost never has to be replaced because of wear. Mechanics will tell you that's quite an accomplishment.

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Ninety-nine years' experience has contributed to the excellent reputation Shepard passenger and freight elevators enjoy in the Midwestern area. Now these fine machines are available nationally in a wide range of sizes and speeds. Give your clients the benefit of Shepard bids on geared elevators. In addition to geared units, Shepard manufactures all sizes of gearless hoisting equipment for higher speed elevators. Make your work easier by requesting Shepard's expert elevator planning assistance. See our catalogue in Sweet's Architectural File.

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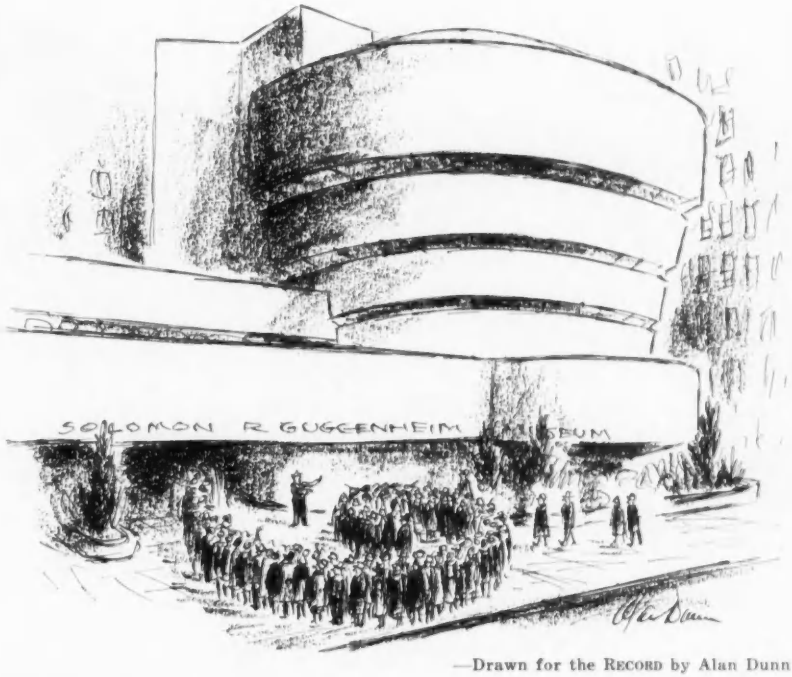
Meetings and Miscellany



—Drawn for the RECORD by Alan Dunn

Middle Atlantic A.I.A. Conference
The Middle Atlantic Regional Conference, A.I.A., held at White Sulphur Springs, W. Va., March 13-14, drew an attendance of several hundred despite a near-blizzard.

"Architects in the New World of Science" was the theme chosen for the Conference by its co-sponsors, the Virginia and West Virginia chapters of the A.I.A., and a lively one it proved to be. One of the two seminars was in the hands of architects, but the other was paneled by far-thinking men outside the profession. At both the luncheon meetings and the banquet, furthermore, non-architects were the main speakers.

The subject of the first seminar was "The New Clients." Panel members were: Herbert Swinburne, A.I.A., on "New Types of Clients"; Roy F. Larson, F.A.I.A., on "Government as Client"; and Robert W. Cutler, A.I.A., on "The Corporate Client."

The second seminar was entitled "Social Sciences and Architecture." Dr. Donald Foley of the University of California, who had given the theme address on much the same subject at the opening luncheon, continued his pertinent and, as one member of the panel put it, terrifying analysis of "Changing Social Patterns." "The challenge to architects," he said, "is devilish—how to design a physical environment for changes still to come." Andrew R. Bergstrom of the Martin Company of Baltimore spoke on "Management and Planning Environment," and Dr. Albert Hastorf, professor of psychology at Stanford University, served as discussant. All three men stressed the increasingly rapid rate of change today.

Dr. Hastorf was the luncheon speaker on the second day, and his address on "The Care and Feeding of Clients" was one of the highlights of the conference. "I think the central situation is that client and architect see things differently," he said; "we behave in terms of what we see, not in terms of what is really there." To prove this, he staged an experiment in optical illusion which was both convincing and amusing. He urged architects to develop techniques for mutual understanding with clients and emphasized the need for research, particularly in the schools of architecture.

The banquet address was given by H. Dorn Stewart, national president of the Producers Council.

—*Florence A. van Wyck*

Consulting Engineers to Meet
The Third Annual General Meeting of the Consulting Engineers Council is to be held in New York, April 28 through May 3, at the Biltmore Hotel. Co-hosts will be the New York City and New York State Associations of Consulting Engineers.

C.E.C. is a national federation of 21 state and regional associations of professional engineers engaged exclusively in private practice.

Honored guest at the meeting is to be Julian S. Tritton, president of the International Federation of Consulting Engineers, the organization of which C.E.C. recently became a member. A principal item of business will be the election and installation of the 1959-60 officers. Mr. Tritton is to be the featured speaker at the May 1 installation banquet.

Among the many topics scheduled for discussion is approval of a proposed C.E.C. "Guide to the Practice of Consulting Engineering," incorporating the results of studies of office practice, fees and contracts, ethics, employe relations, and minimum standards.

The present C.E.C. officers are: C. C. Pate, president; L. K. Crawford, first vice president; Ralph M. Westcott, second vice president; Hueston M. Smith, secretary; B. M. Dornblatt, treasurer; Edward J. Wolff, past president. The executive secretary is Larry N. Spiller. C.E.C.'s offices are at 326 Reisch Bldg., Springfield, Ill.

C.S.I.'s Third Convention Coming
The Third Annual National Convention of the Construction Specifications Institute is to be held in Chicago, May 4 through May 6, at the Palmer House. The convention chairman is Warren R. Richardson, president of the Chicago Chapter.

The winning specifications resulting from a Specifications Competition will be displayed. Active and associate C.S.I. members were eligible to submit entries, which were to be

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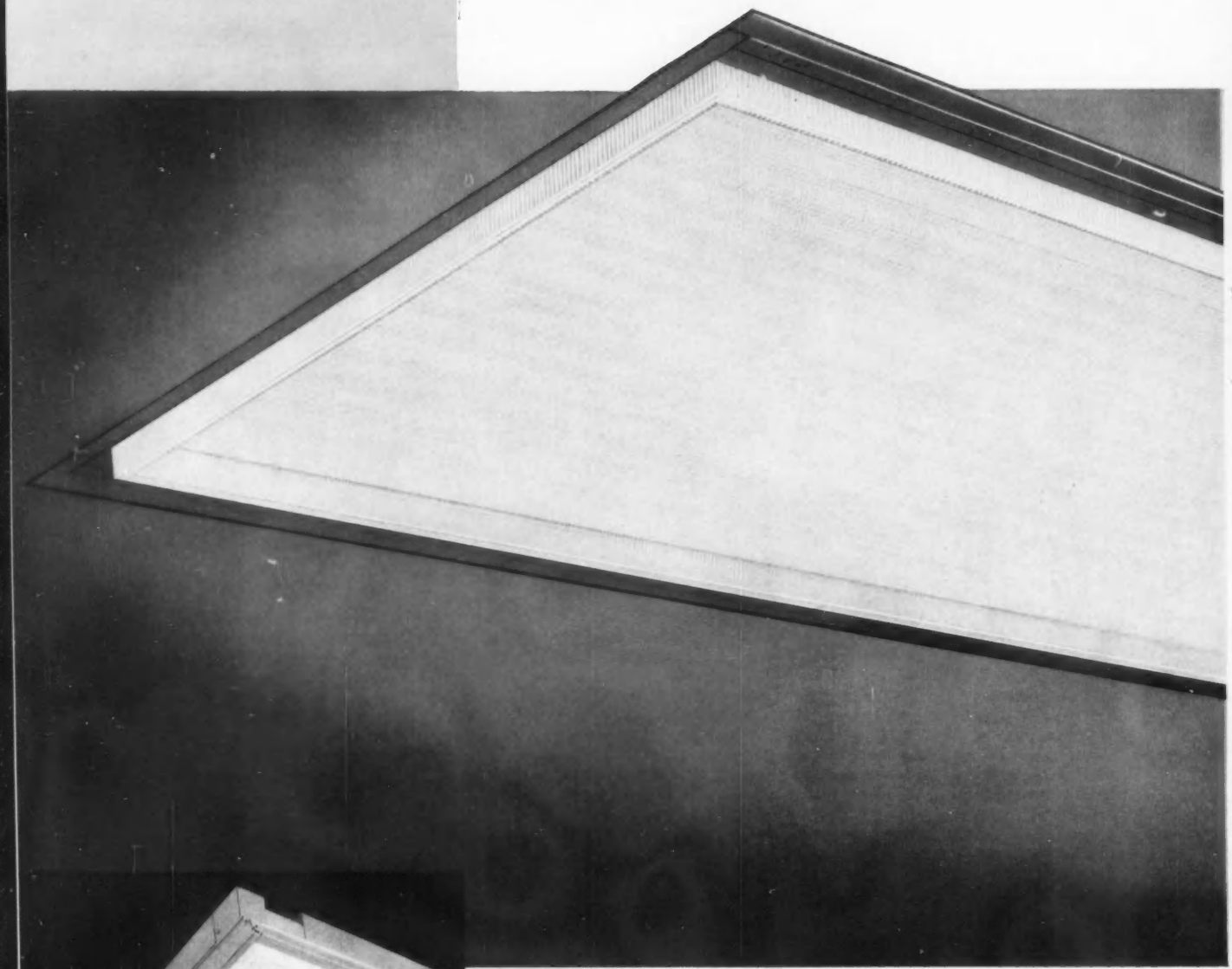

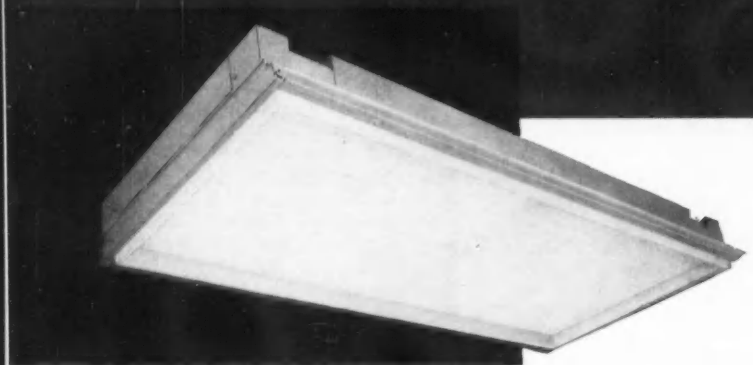

Two Totally New Concepts...
2-Foot-Wide Installation...

HOLOFLUX recessed units, with many functional advancements, are available in 2 major styles. One employs a luminous prismatic border (as shown) for ceiling illumination. The other features flat CONTROLENS for unbroken ceiling surfaces . . . Basic units, in 4-foot lengths (2 or 4 lamps per section) are made for single or continuous run applications.

Exceptional Versatility...
Wide Range of Applications

HOLOFLUX satisfies the increasing demand for highly efficient, prismatically controlled, recessed lighting. Its distinctively simple, streamlined design integrates with a wide variety of contemporary interiors: stores, offices, showrooms, banks, public buildings, waiting rooms, sales offices, airport public areas, institutions. Recommended for today's low-ceiling installations.

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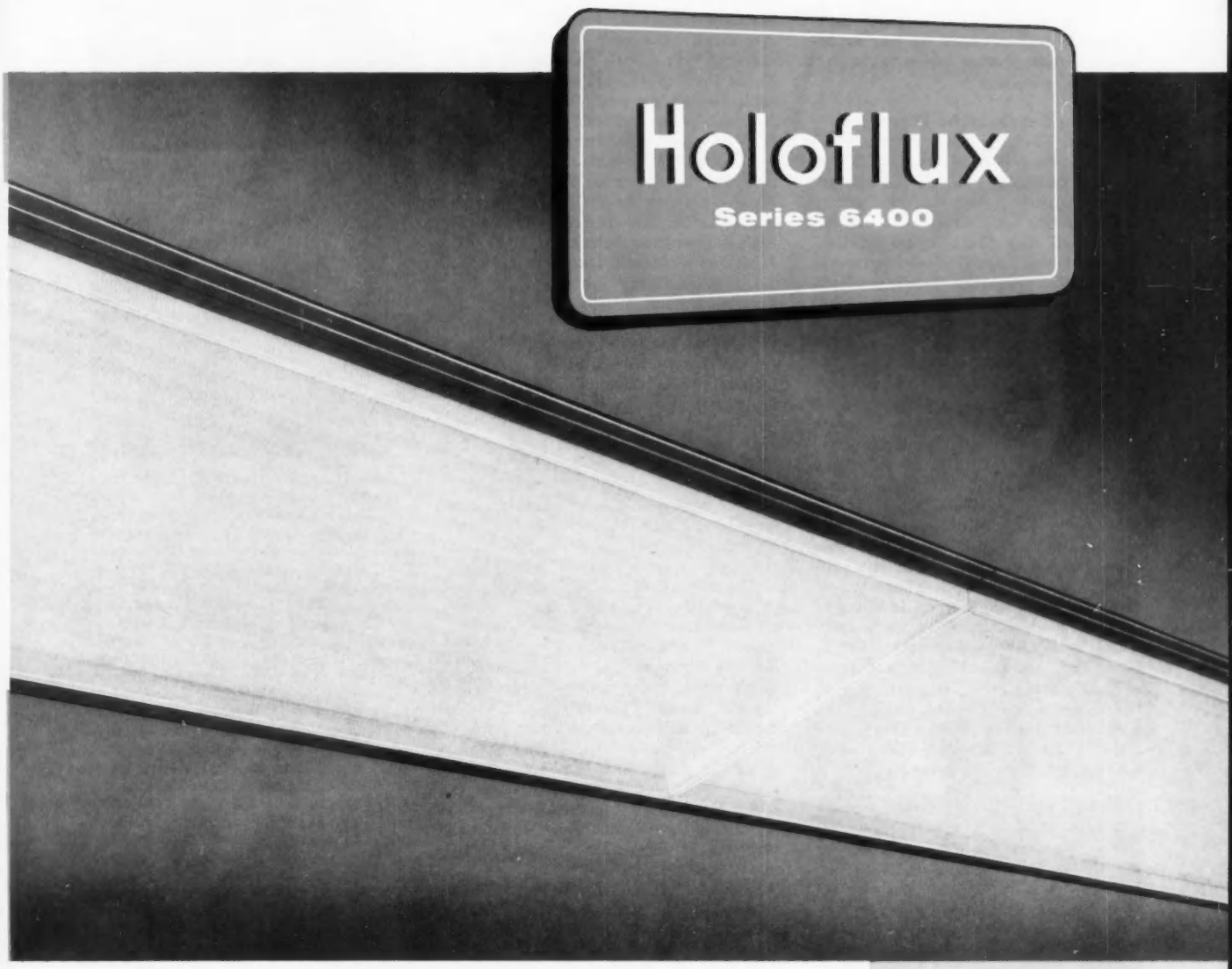

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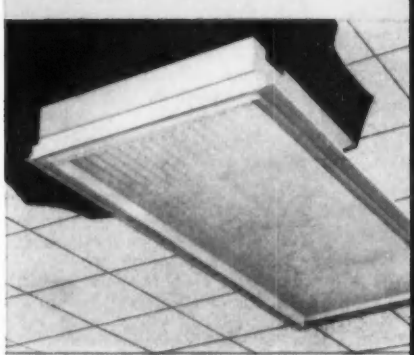
All the specialized skills and experience accumulated by HOLOPHANE through 61 years of lighting leadership have contributed to the development of this latest achievement—the new HOLOFLUX* family of luminaires... Unique illuminating advantages, never before available, are made possible by the PRISMALUME* (acrylic plastic) CONTROLENS*. These lenses are crystal clear, light in weight, shatter-resistant, and free from discoloration. They are molded to provide prismatic patterns that assure highest efficiency, lowest brightness, upward (ceiling) light... HOLOFLUX mechanical features: very shallow fixture; easy installation; great rigidity for continuous runs (no visible metal); positive action door; economical maintenance.

For all types of ceilings: Holoflux units are engineered for easy installation in all modern forms of ceilings, including the inverted "T", "Z" and "H" spline; also in the ordinary and acoustical plastic ceilings.



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received by March 30. Full sets of specifications in any one of five divisions are to be judged by two architects, two engineers, two contractors, and two specifiers.

Lighting Levels to be Discussed
The new Illuminating Engineering Society-recommended levels of lighting for buildings will be the subject of a conference to be conducted by the Building Research Institute in Cleveland, May 20-21, at the Statler-Hilton Hotel. Architects, engineers, contractors, building products manufacturers, and others concerned will study the I.E.S. recommendations in terms of cost, noise and heat control, architectural design, and electrical system engineering.

The meeting will give a preview of the recommendations, as the complete report on the studies conducted for I.E.S. at the University of Michigan is not to be published until June. Richard H. Blackwell, head of the University of Michigan research group, and C. L. Crouch, technical director of I.E.S., will open the program. There also will be a demonstration of new illumination levels and design trends at the Nela Park Laboratories of the General Electric Company. Murray L. Quin of Daybrite Lighting, Inc., is chairman of the first day's program; Robert E. Fischer, associate editor (engineering) of ARCHITECTURAL RECORD, of the second day's program.

Eduardo F. Catalano, professor of architecture at M.I.T. (far right), explains an example of his hyperbolic paraboloid construction to five of 13 Chilean students who recently made a six-week tour of the eastern U.S., including two weeks at M.I.T's School of Architecture and Planning. The students, chosen for architectural ability and leadership from three Chilean universities, made the trip under M.I.T. guidance, sponsored by the State Department as part of the International Educational Exchange Program; they were accompanied by three Chilean professors. Marvin E. Goody and Bernard P. Spring, M. I. T. assistant professors of architecture, were guides during the tour. The students shown are (left to right) Francisco Schlotfeldt, Roger Magdahl, Lautaro Moraleda, Carlos Barroilhet, Walter Malsch

Rome Prize Fellowships Awarded
Michael Rapuano, president of the American Academy in Rome, announced last month the award of 12 Rome Prize Fellowships for one year each, beginning next October 1. The fellowships carry $3000 each and free residence and studio at the Academy.

The two fellowships in architecture were awarded to: Theodore John Musho, University of Cincinnati, B.S. in Arch., '58, now studying for a master's degree in architecture at M.I.T.; John Jay Stonehill, Dartmouth, A.B., '55, now studying for a B.Arch. degree at Yale.

Milwaukee Architecture Exhibit
An architectural exhibition, "Architecture: Man's Space," is scheduled to open in Milwaukee on April 9 and run through May 17. The exhibit has been prepared by and is jointly sponsored by the Wisconsin Chapter, American Institute of Architects, and the Milwaukee Art Center. It will be held in the Art Center in the new Milwaukee County War Memorial Building (Eero Saarinen, architect).

The exhibit is intended to portray "the reality of great contemporary architecture as *space* and *sequence of spaces* that enhance the spirit and artfully shelter man and his activities." Basic space concepts throughout architectural history will also be shown as background. Among the architects whose work will be represented are Le Corbusier, Saarinen, Yamasaki, Kahn, Stone, Wright, Mies.

The exhibit is expected to be circulated after it ends in Milwaukee, starting in other Wisconsin cities.

Whiffen Wins S.A.H. Book Award
The 1958 Book Award of the Society of Architectural Historians went to Marcus Whiffen for *The Public Buildings of Williamsburg, Colonial Capital of Virginia* (published by Colonial Williamsburg; distributed by Henry Holt & Co.).

Mr. Whiffen, formerly an assistant editor of *Architectural Review*, has been architectural historian at Colonial Williamsburg since 1954.

A.I.A. Chapter Giving New Award
The Buffalo-Western New York Chapter, American Institute of Architects, has undertaken the annual grant of a $1000 scholarship award, starting this spring. The award, for post-graduate study, is sponsored by Anchor Concrete Products. The recipient is to be determined by the chapter's scholarship committee each year. Prospective applicants may apply for requirements to Thomas Justin Imbs, A.I.A., 225 Delaware Ave., Buffalo 2.

It isn't every day that 220 visitors from a foreign city arrive together for a visit to this country. But such a group from the Milan Association of Architects recently was here for a whirlwind tour. The tour, which centered around New York, was organized and led by Gio Ponti, architect, designer, and editor of *Domus*. Shown here, some snapshots of a busy week. *Top:* At a reception given by Dr. Filippo Donini, director of the Italian Institute of Culture: Ponti; Dr. Donini; and L. Bancel LaFarge, president of the New York Chapter, A.I.A. *Second cut:* Among those who enjoyed chatting with the Italians in various languages were Mrs. Edward D. Stone; Mr. Stone; Morris Ketchum, Jr., president of the Architectural League; and Emerson Goble, editor, ARCHITECTURAL RECORD. *Third cut:* There was one day-long bus tour which started in New Haven, where Paul Rudolph was host during a tour of the Yale campus and the city. In Mr. Rudolph's studio, making use of the "conversation well": Richard Foster; Philip Johnson; Ponti; Mr. Rudolph; and Jeanne Davern, assistant to the editor, ARCHITECTURAL RECORD. *Fourth cut:* Again in Mr. Rudolph's studio, an absorbed group of Italians in the background, and in the left foreground, Raffaela Crespi, secretary of the Milan Association of Architects, and Gino Pollini, one of the architects. Later that day, the group was received —in their own houses in New Canaan— by Marcel Breuer, Philip Johnson, and Eliot Noyes

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built to take it and dish it out

Tear Drop "20"
capacity — 20 oz.
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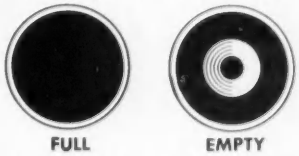
Eagle Eye* gleams from reflected light when dispenser needs refilling.



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Eagle Eye Indicator tells *instantly* when soap is low.

Sparkling all-metal tear drop design • Vandal-proof • Protected against clogging • Easy filling • Saves on soap

New soap dispenser beauty, plus economy and durability. *Handsome, tear drop styling!* Gleaming copper-nickel-chromium plate over rugged, all-steel case. Copper and nickel-plated inside.

Push-in chrome-plated bronze valve with vital working parts of corrosion-resistant stainless steel. Delivers a measured amount of liquid or lather soap. No waste. Eagle Eye Indicator tells *instantly* when soap is low.

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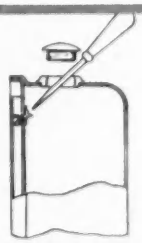
L-999 Lather Soap Dispenser. 40 oz. Capacity.
L-991 Lather Soap Dispenser. 20 oz. Capacity.



Vandal-proof! Dispenser interlocks with concealed mounting plate. Retaining screw is inside. Cap can be removed only with special wrench provided.

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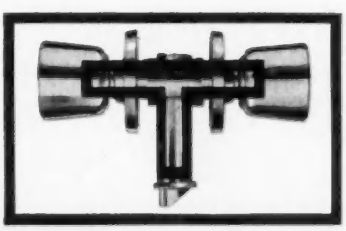
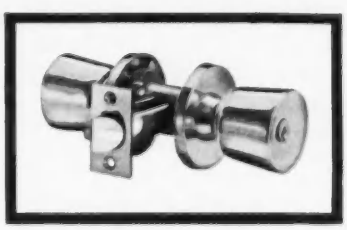


"T" Zone (torque zone) Toughness. One-piece aligning tube and latch tube interlock, form rugged bend-proof, torque-resistant "T" in critical twist area.

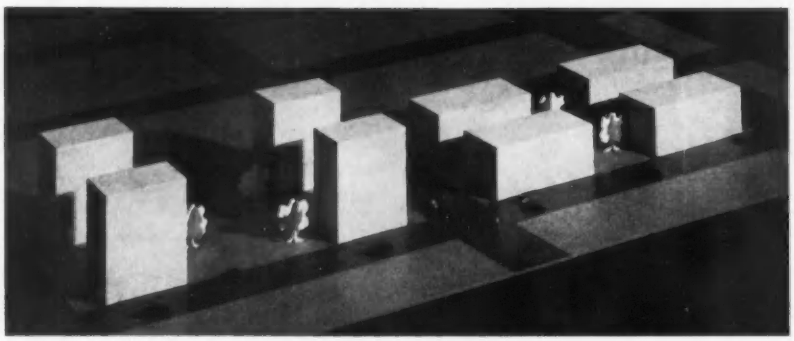


Tyler Design (YM)— now available in the MagnaLock line of 161 series heavy-duty bored locks.

Proposals for Revised New York Zoning Would Affect Design

A proposed new zoning resolution for New York, recently made public, would substitute for the present complicated, much-amended regulations dating from 1916 a simplified set of rules intended to make possible more architectural variety, less crowding of people and automobiles, and more logical land use.

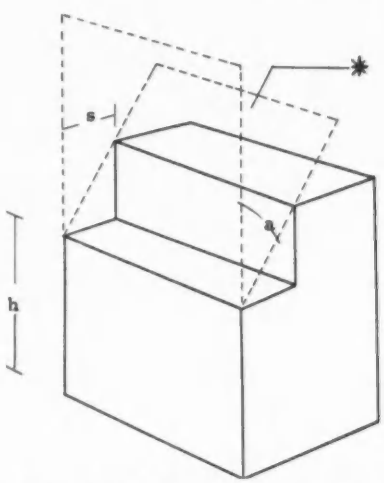
The resolution and detailed explanations are contained in a 376-page report prepared for the City Planning Commission (James Felt, chairman) by Voorhees Walker Smith & Smith (now Voorhees Walker Smith Smith & Haines), New York architects who were special consultants on the revision. Perry Coke Smith was the senior partner in charge of the zoning project, Ralph Walker participated, and Jack C. Smith was technical director.



Floor Area Ratios are the same for both blocks, but Open Space Ratio for left block is much higher

Commenting on the new zoning resolution, L. Bancel LaFarge, president of the New York Chapter, American Institute of Architects, said: "Notably, the resolution would enable architects to design with much greater freedom and effect, for it would not practically impose, as present regulations do, a 'wedding-cake' design as a way of getting maximum bulk in areas such as central Manhattan. Under the proposed new zoning regulations, the shape

continued on page 36



h: Height of sky exposure plane above street line; s: Initial setback distance; a: Angle of slope of sky exposure plane over zoning lot measured down from the vertical; *: Sky exposure plane

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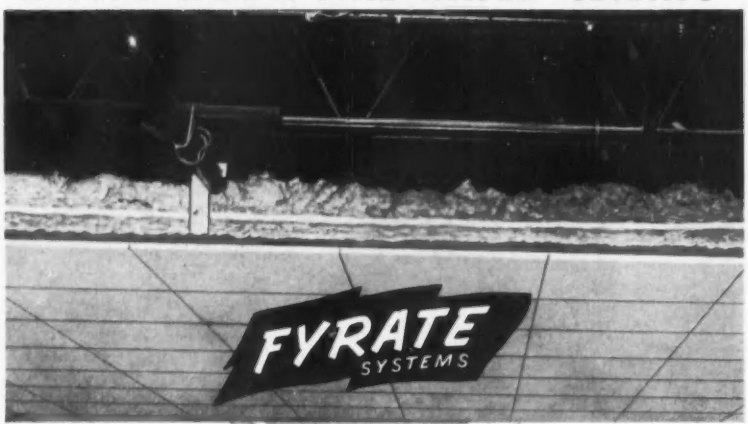

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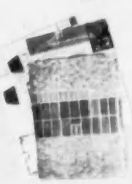

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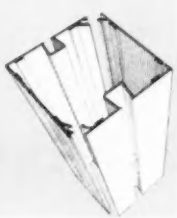

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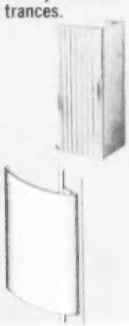

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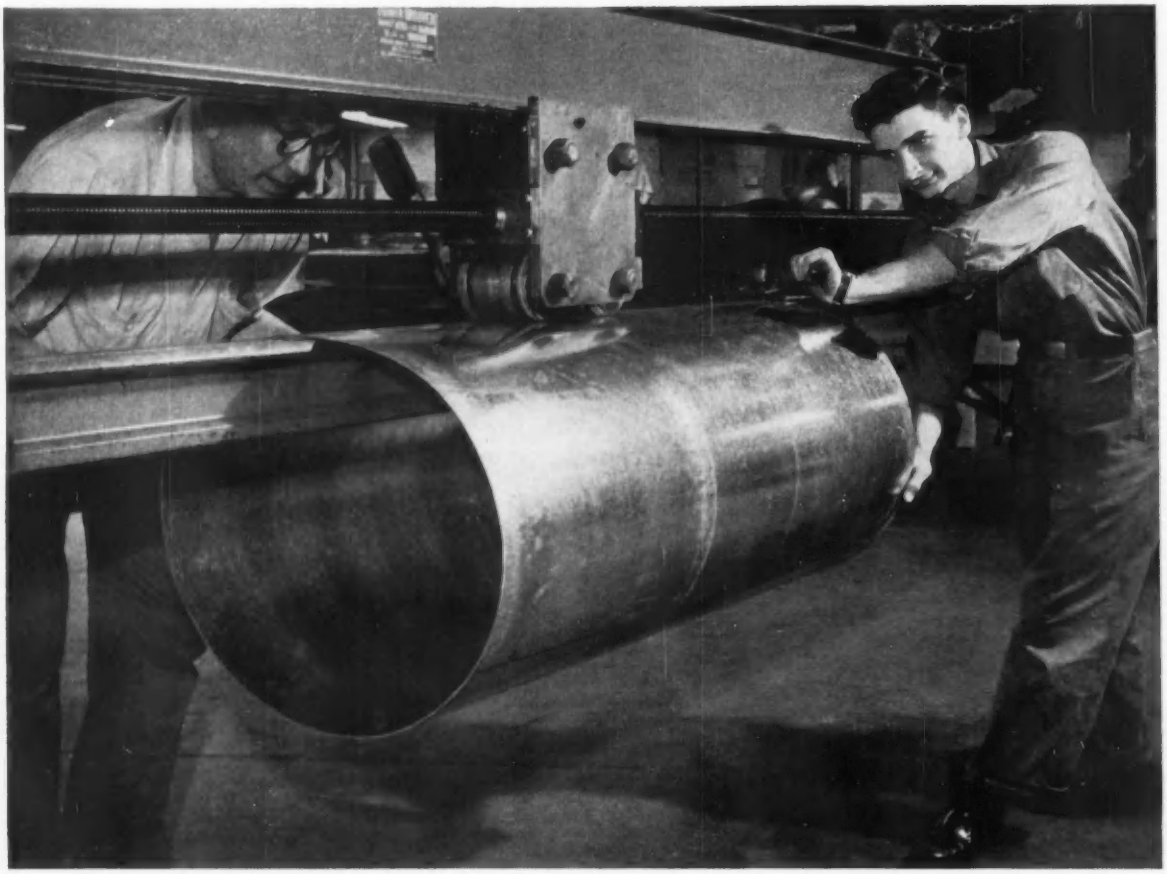

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The President's Dining Room, Marine Trust Company, Buffalo, N. Y., paneled in Weldwood Algoma Grade Architectural Butternut. Architects: James, Meadows, and Howard, Buffalo, N. Y.

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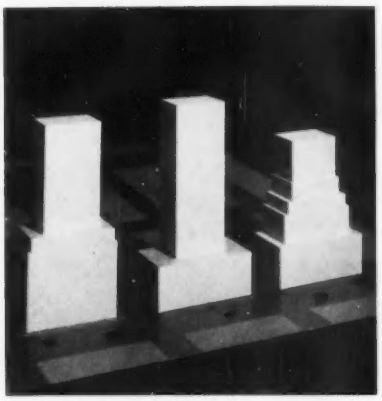
and the form of the building would be the result of the architect's finest design judgment."

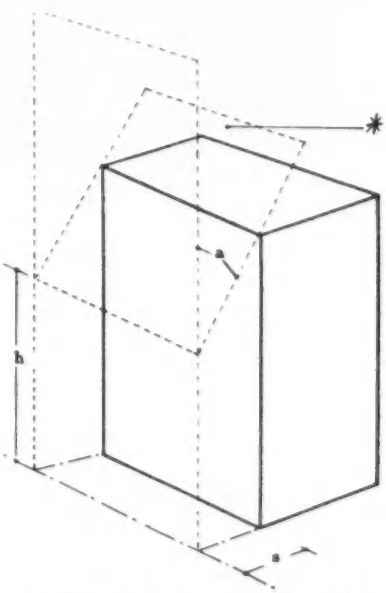
To summarize some of the architectural highlights: A new zoning map of the city divides the land into 47 types of residence, commercial, and manufacturing districts, taking into account present use *and* desirable future use. For each district relatively simple formulas and reference charts control density, building bulk, and open space (also parking and loading facilities). The key formulas are:

Floor Area Ratio: Floor space multiplied by 100 and divided by lot area. This is directed against excessive bulk. *Open Space Ratio:* Open space multiplied by 100 and divided by floor area. This new regulation, for residence districts, is intended to insure enough light and air. *Sky Exposure Plane* and *Alternate Sky Exposure Plane:* These provisions (illustrated) are simplified formulas to give more light and air and to allow more flexible design, using, respectively, setbacks or a deeper front open area. *Tower Regulations:* This third bulk device, usable alone or in combination with either of the others, allows a building to cover 40 per cent of its lot with no setbacks or angle limitation as long as the Floor Area Ratio is not exceeded.



Left to right: 1. Open area at ground level permitting higher rise before initial setback, with tower above; 2. Maximum bulk up to required initial setback, with tower above; 3. Maximum bulk using proposed standard envelope, with no bonuses

Also, bonuses are set forth in formula form that grant more floor area according to how much open space or plaza area is provided beyond the minimum.



h: Height of sky exposure plane above street line; s: Depth of optional front open area; a: Angle of slope of sky exposure plane over zoning lot measured down from the vertical; *: Alternate sky exposure plane

more news on page 40

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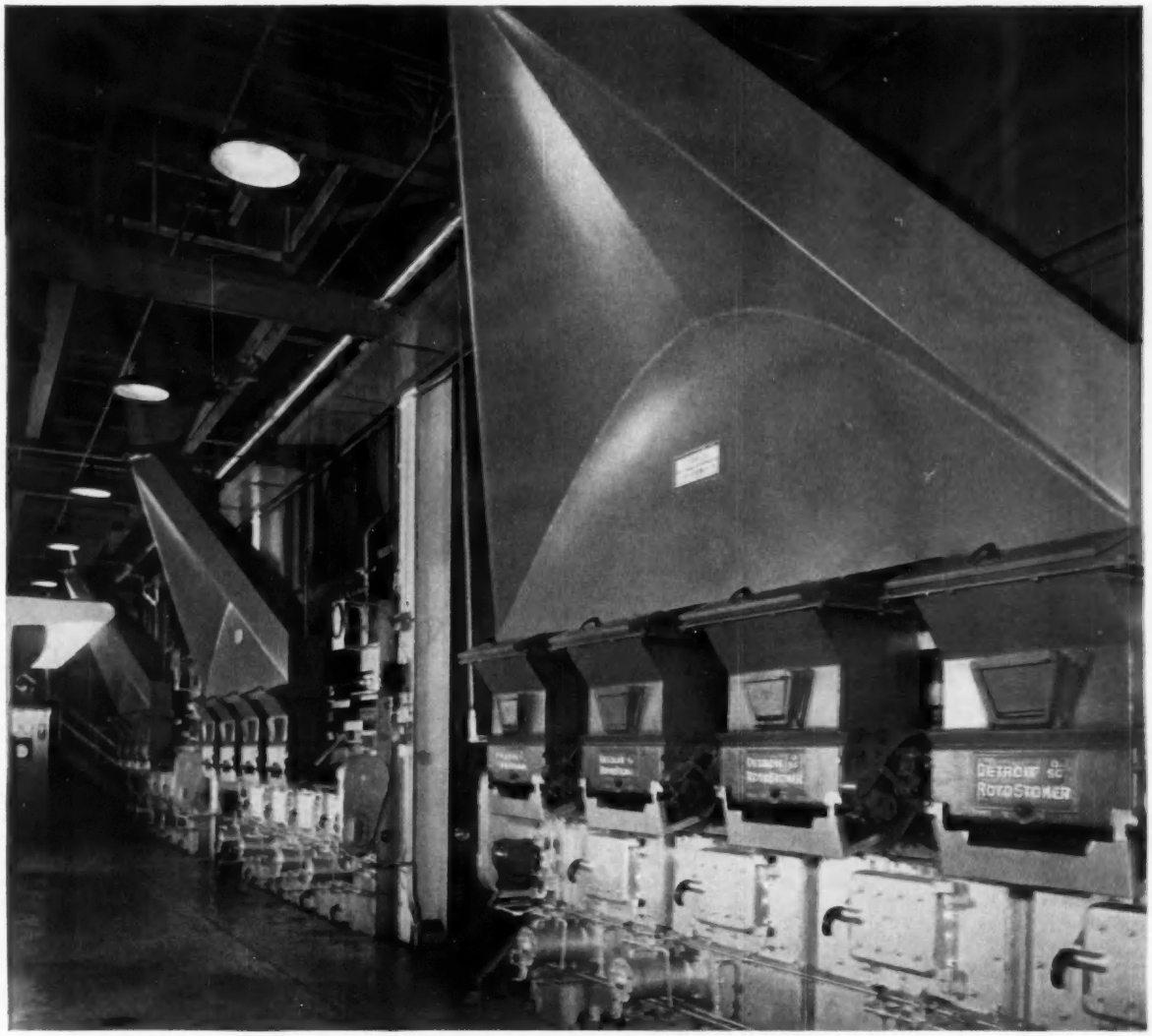

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more news on page 44

WEATHER STRIPPING

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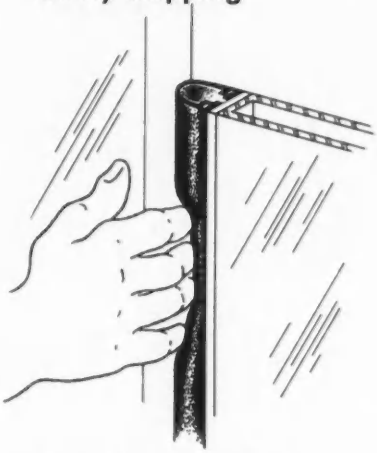

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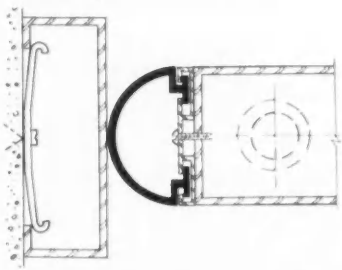

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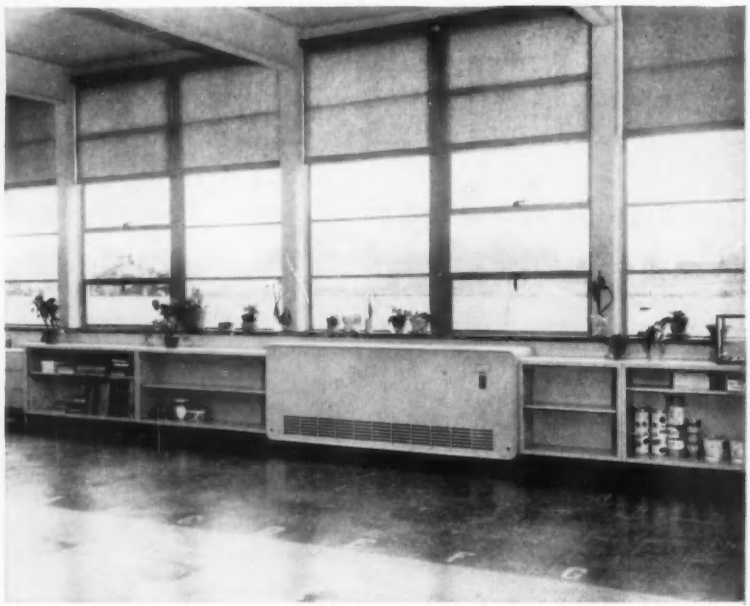
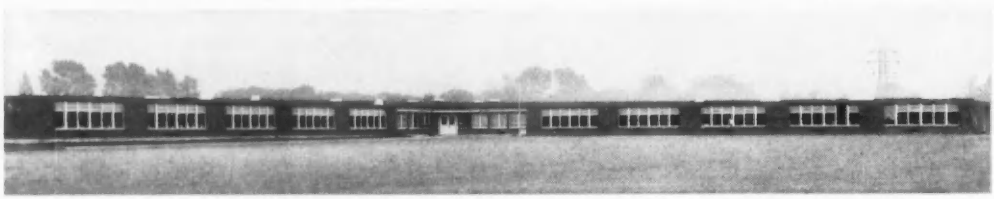
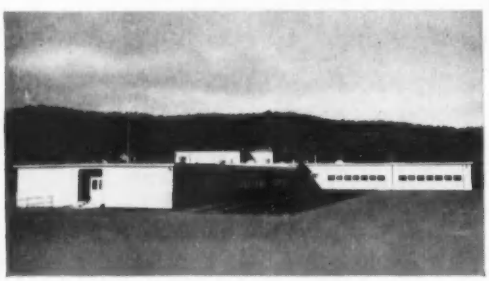
Monroeville, Pennsylvania

Woodbine Elementary School
Cicero, Illinois





Angola Elementary School—Lake Shore, New York



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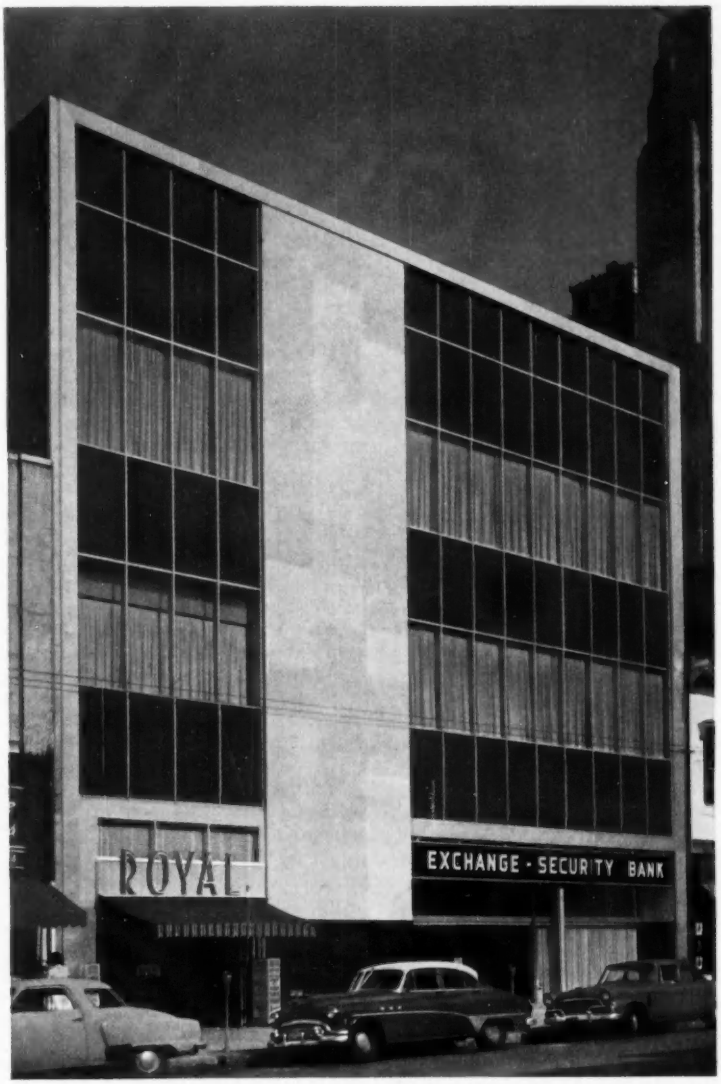
Cinderella and the glass curtain wall



Architect: William P. Shaw, Birmingham, Ala.
Contractor: Hallmark Construction Co., Birmingham, Ala.
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Cinderella in this true story is the old-fashioned, architecturally out-dated building, above. But just look at the change—at the beauty, style and modernity—that has been wrought by the magic of glass. Cinderella has been glamourized . . . and her life extended indefinitely.

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A Washington Report by Ernest Mickel

U.S. IN MOSCOW: U.S. PREPARES EXHIBIT TO REFLECT MANY FACETS OF AMERICAN LIFE

The American exhibition in Moscow this summer is being planned in such a way that many of the criticisms directed at this country's performance at the Brussels international exposition last year are not expected to arise. At least those government officials charged with preparing for the first American exhibition of its sort in the Soviet Union express confidence that these pitfalls will be avoided.

Censure last year seemed to center on the type of things displayed to illustrate American life at the Belgian exposition. Many said they felt the exhibits did not go deeply enough into the true expression of our day-to-day living.

In any event, officials emphasize, expressing America's deep-seated convictions and living habits to the world at a fair in Brussels for several months and spreading America's science, technology and culture before some four million native Soviets in the briefer span of six weeks in their own capital are two different things planned quite differently.

Five Themes to Play

The basic question of shelter for what this country plans to do arises in both areas however. For Moscow, planners have approved the designs of Welton Becket of Los Angeles—a Kaiser aluminum geodesic dome to be erected by Lydick Roofing Company of Fort Worth, Tex., and a fan-shaped exhibition hall. The exhibitions themselves are being designed by George Nelson Inc. of New York (see page 10).

Several major themes have been developed for the Moscow exchange exhibit: America learns (education), America explores man and the universe (science and research), America creates (art), America travels, America plays, and American community life.

The Office of the American National Exhibition in Moscow—a cooperative Federal government effort—hopes the exhibit will prove to be a true "corner of America" in the heart of Moscow for the six-weeks period.

U.S.S.R. in New York

Target date for the opening is July 25. The U.S.S.R., by reciprocal agreement, is preparing its own exhibition to open in the Coliseum, New York City, June 28. That will run for one month.

The State Department, Commerce Department, United States Information Agency and other Federal functions are joining hands to plan, transport and set up the Moscow show. A USIA spokesman said the purpose was simple: to increase understanding in the Soviet Union of the American people, the land in which they live, and the broad range of American life, including American science, technology and culture.

An early announcement from the Office of the American National Exhibition in Moscow defines the method: a comprehensive exhibition, with the United States Government, American private industry and institutions participating, to project a realistic image of America through exhibits, displays, films, publications, fine arts, performing arts. How America lives, works, learns, produces, consumes and plays; what the American people are and what they stand for; America's cultural and spiritual values; all these will be reflected. USIA's director George V. Allen, is coordinator.

Opening Scheduled July 25

Site of the exhibition is a 300,000 sq ft plot in Sokolniki Park. This is described as a 1500-acre wooded recreation area 15 minutes by subway from downtown Moscow also served by bus and trolley lines. Actual construction work at the Sokolniki Park location began about March 1 with the schedule calling for completion of the two principal structures early in June. The Soviet government gave the planners a priority on labor and no difficulty in meeting the July 25 opening date was anticipated.

American design and construction, it appeared, would be represented to the Russian people through the buildings themselves, through a full-scale prefabricated home to be erected on the grounds, and through visual and operating aids which will include an architectural exhibit similar to that sent to Moscow several months ago by the American Institute of Architects in connection with the U.I.A. meeting.

Helping Russians to understand American home life better will be a number of displays ranging from the highly-popular garbage disposers and dishwashers to voting machines and all sorts of tools.

As for the buildings themselves, this "corner of America" in Moscow is certain to make its four million or so visitors aware of a specific form of contemporary American architecture.

The 200-ft diameter anodized aluminum dome will rise 78 ft, providing 30,000 sq ft of floor space. The 50,000 sq ft in the separate exhibition hall structure will be enclosed in glass, steel and aluminum and this building will rise 28 ft. Both buildings are to be purchased by the U.S.S.R. at the close of the exhibition under terms of an agreement between the United States and the All Union Chamber of Commerce of the U.S.S.R.

The OANEM explained that a wide range of products of American industry and labor would be shown in the "glass pavilion" along with book displays, radio, television, hi-fi, paintings and the other cultural exhibits, including that on architecture. A two-level interior modular steel structure will create mezzanine areas from which the visitor may observe exhibits above, below and on the same level.

The geodesic dome is to serve as an information center. Around the inside perimeter will be exhibits on science, research, education, labor, productivity, health and social services, agriculture and other aspects of American life. The outside perimeter will offer an "American gallery" with such figures as Abraham Lincoln, Mark Twain, Benjamin Franklin, Walt Whitman and others familiar to the Soviet people.

The grounds near the pavilion and the dome will serve as another exhibition area for outdoor technological displays, farm equipment, the prefabricated house, and automobiles. This space also will contain a children's playground.

This solo exhibition by the United States will not be a trade fair in any sense.

Another building was being scheduled to contain the Circarama presentation, the "movie-in-the-round" which was so successful at the Brussels Fair. A small, circular structure, it will be designed in such a way that twice as many people can be handled for each performance as were accommodated at Brussels. There, approximately 300 moved through the building on a continuing basis; at Moscow, the number is expected to reach 600. The Circarama movie itself is being redone by Walt Disney; updated with new sequences and a Russian soundtrack.

How much does all this cost? With time too short to request a supplemental 1959 appropriation, President Eisenhower authorized use of $3.3 million in Mutual Security Funds and there was $300,000 available from earlier Congressional appropriations. USIA is underwriting the cost of Circarama.

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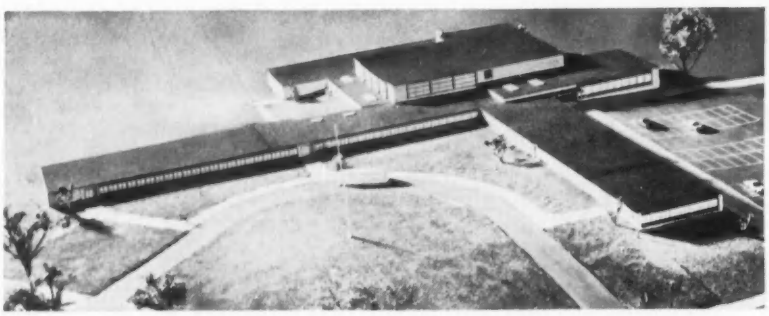

School board members of Attica, N.Y., when planning a new 680 pupil junior-senior high school, were especially conscious of the importance of schoolroom heating in the preservation of child health. They investigated several different types, and visited schools where different systems were installed to see them in operation.

The system which impressed them most was the Burgess-Manning Radiant Acoustical Ceiling which uses radiant energy from the ceiling for heating, the same radiant energy that comes from the sun. Convection currents from radiators or air ducts are eliminated.

The use of radiant energy from the ceiling, they found, insured a uniform temperature throughout the room, even close to the windows. It does not heat the air, but only the solid objects it strikes. Floors, walls, desks, chairs, and the pupils themselves,—any objects that intercept the radiant energy waves, are warmed. The floor was warm enough for pupils to sit on during the coldest winter days.

The school board members, wanting the very best for the new Attica High School, decided to install a Burgess-Manning Radiant Acoustical Ceiling.

With this type of comfort conditioning there are no radiators to clutter up the floor, and no drafts. Temperatures are uniform throughout the room and from floor to ceiling.

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Any warm object radiates energy to the cooler objects surrounding it.

Human comfort is dependant on heat transfer. Our bodies are constantly generating heat that must be dissipated, mostly by radiation, as it is produced.

If this heat transfer is too rapid, as when the body is surrounded by cold objects, we feel cold. If it is surrounded by hot objects, slowing down the transfer of body heat, we feel hot. In cold weather we wear heavy clothes, not to keep cold out, but to keep our body heat from dissipating too rapidly. In hot weather the reverse is true.

Older heating and cooling methods bathe the body in volumes of warm or chilled air, depending on the season.

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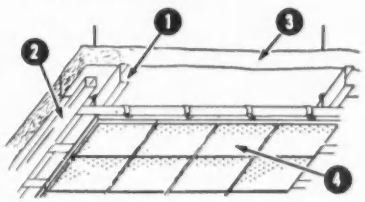

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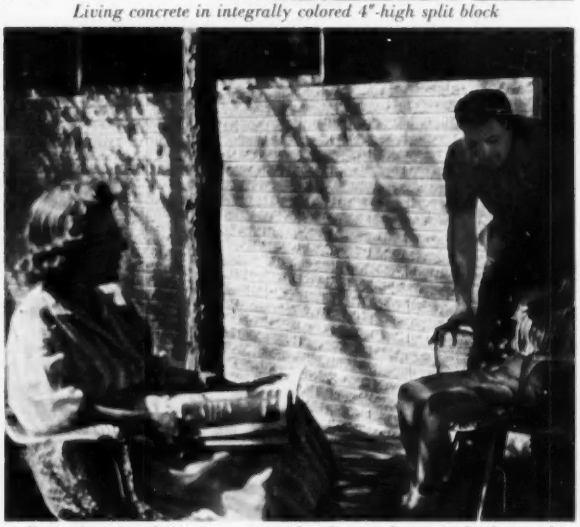

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Washington Topics *by Ernest Mickel*

Decentralization Inevitable, Report Says: What Next?
The final report on a full year's study of the problems of metropolitan growth in the National Capital region contains much to recommend it for reading by architects everywhere. Known as the Final Report of the Joint Committee on Washington Metropolitan Problems of the Congress of the United States, it has been submitted by committee chairman Senator Alan Bible of Nevada. Staff director is Frederick Gutheim.

The study was described as being unique among metropolitan area studies in its combination of breadth of scope in the structure of regional government and planning, and depth in the selected areas of immediate action. The point is made that Washington's growth pattern is not unique and has strong parallels with other metropolitan areas.

Delving into "power and inevitability" of city decentralization, this report observes: "What people mean when they talk about decentralization as a threat to the central city is less an absolute loss than a change. What is left in the central city tends to be the poorer families, the racial minorities, the older government bureaus, the small businesses, the specialized kinds of retail trade. What we find in the suburbs are younger families with children, new business, manufacturing that has stabilized its product and is relatively self-contained, shops selling convenience goods. What remains is to put together these two complimentary parts of the metropolitan region in the same general plan."

Decentralization was looked upon by the committee as a response to the advance of transportation and communications technology, and to the growth of metropolitan areas generally. It will not be halted or reversed, it was said, by improvements in the central city, changes in civil defense policies, or other modifications in the conditions of metropolitan growth.

What Kind of Metropolis?
Public discussion has placed too much emphasis on the "either-or" aspect of this decentralization question, committee members found. Their report read: "It has been argued that the future city will be either more decentralized, and hence urban decay will be hastened; or decentralization will somehow be halted and thus the central city—its present character, its property and tax values—will be saved. Rather than this unproductive way of looking at the problems created by urban change, consideration should be given to the probability that the forces now changing our large cities are in fact creating a wholly new kind of metropolis."

And under the heading, "Consequences of doing nothing," the report stated: "In the end, all metropolitan interests share the same fate. Whether they are governmental or business interests, social or economic interests, central city or suburban interests, all are affected."

It was suggested that the Commission of Fine Arts, as an independent agency, assert greater initiative toward influence in its already-prescribed sphere. The committee complained that the Commission has not acted sufficiently often to call the attention of Congress to incidents of major importance where their advice has been ignored by agencies whose statutes required they seek it.

Urban Renewal Opportunities Emphasized at Congress
The many complex problems of financing, land assembly and disposal, and construction associated with re-

continued on page 326

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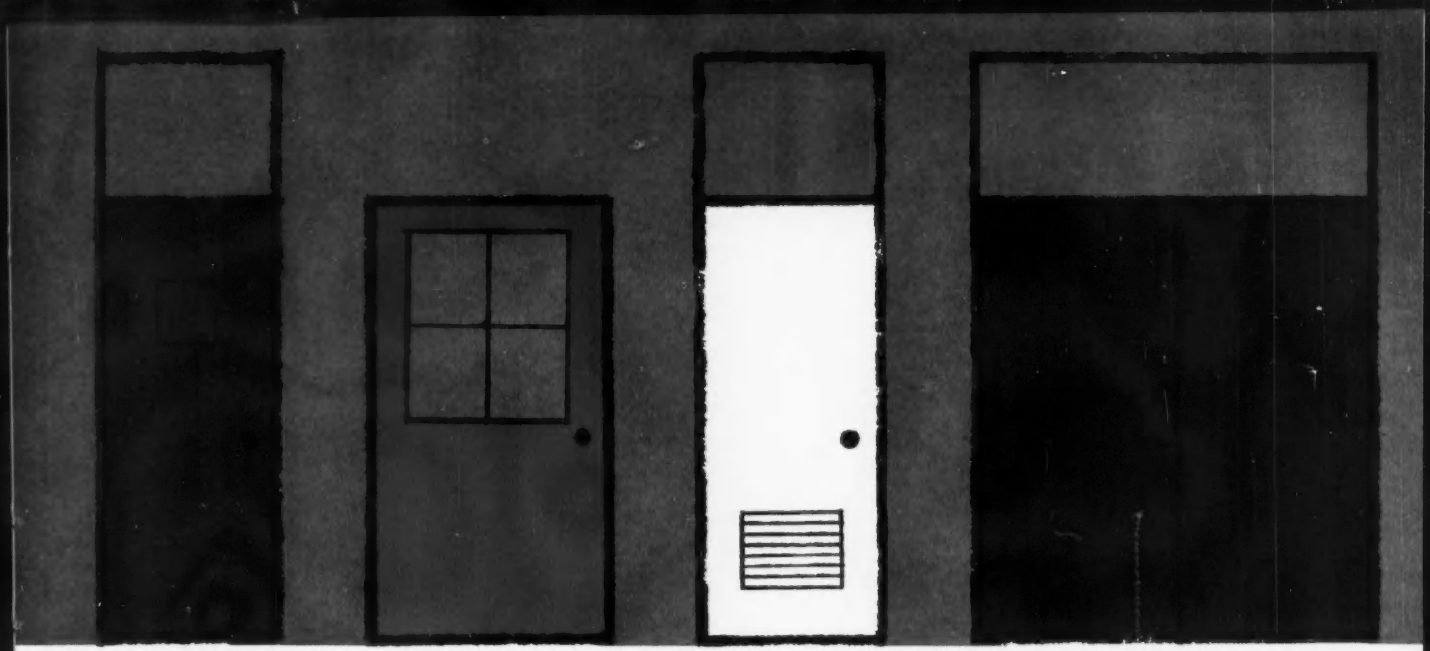

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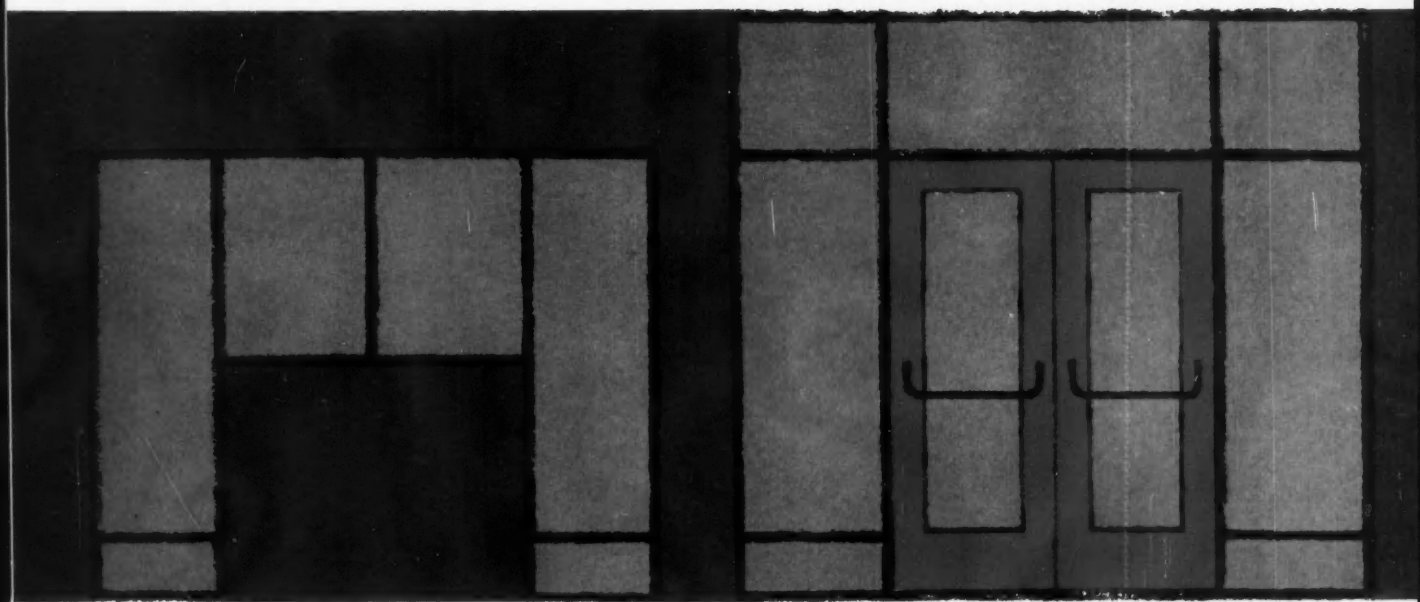

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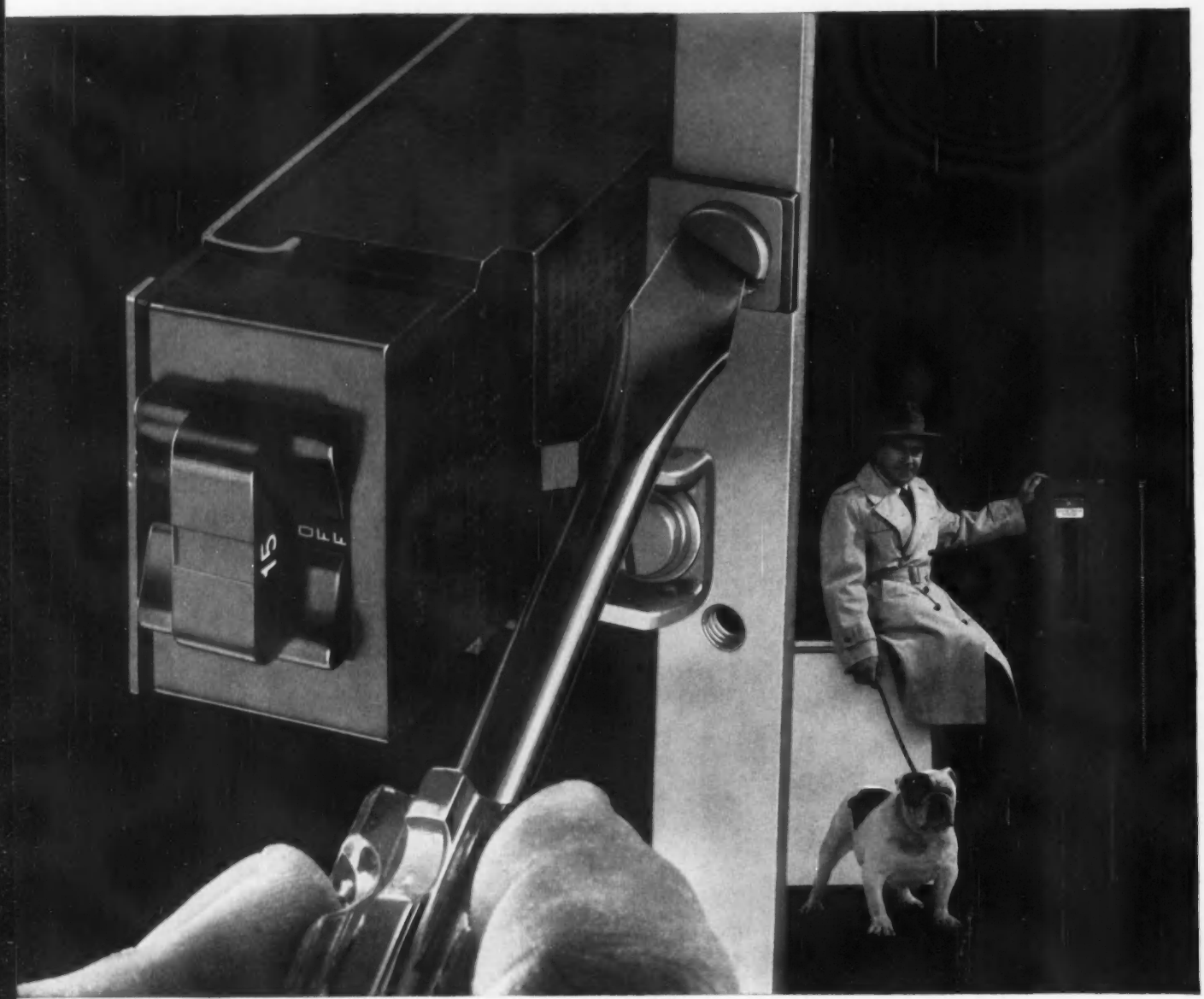

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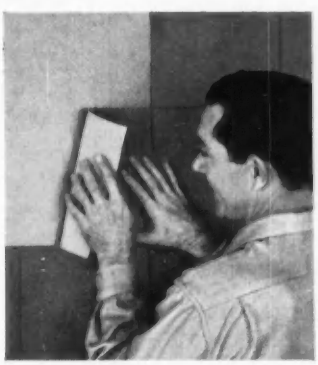

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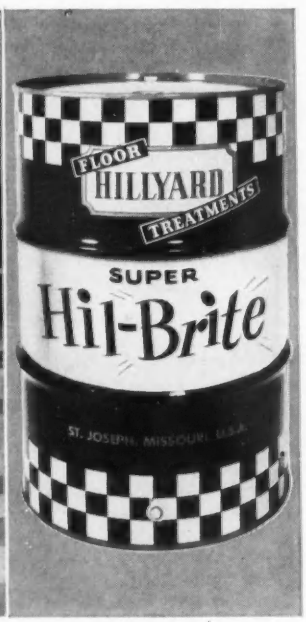

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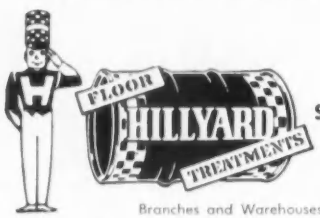

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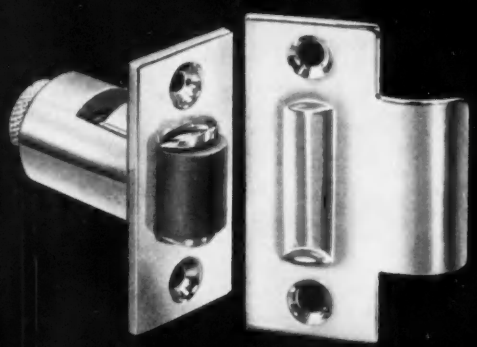

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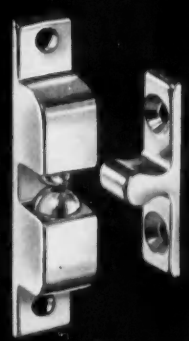

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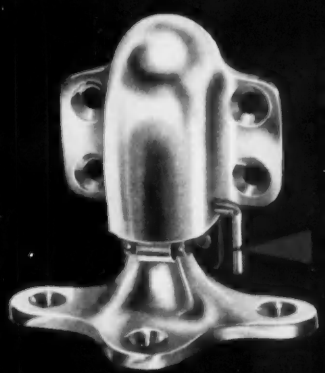

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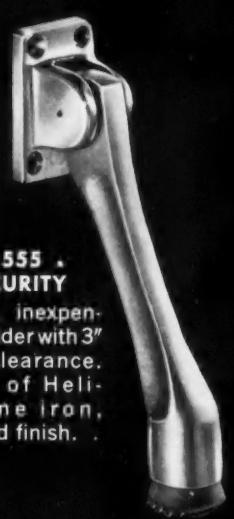

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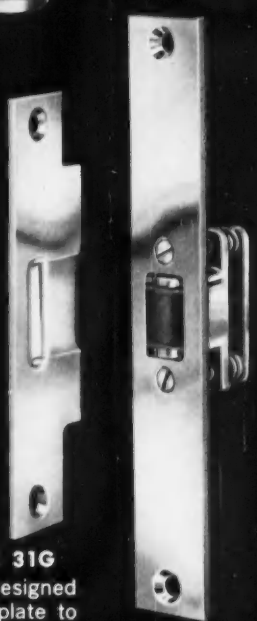

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THAT FLOOR IS the Tessera Series IN Armstrong VINYL CORLON

The ordered elegance of Japanese domestic architecture is the perfect environment for the lacquered tables, parchment lamps, and other furnishings sold here, in the new Takashimaya department store. The architects used the Tessera Series in Armstrong Vinyl Corlon to adapt their Japanese design to the rigorous practical needs of a Manhattan store.

"Tessera's" delicate mosaic pattern—composed of colored vinyl chips set in a bed of translucent vinyl—contrasts richly with the plain surfaces of other structural materials. The beige coloring suggests the traditional tatami mats and harmonizes with the frames of the shoji. Being monochromatic, "Tessera" provides a unifying background for the varicolored displays.

In regard to service, "Tessera" is a heavy-duty floor comparable in performance to battleship linoleum that will decorate Takashimaya for a long time. Its superior resistance to abrasion and furniture loads and the smooth, virtually seamless surface assure easy, economical maintenance for many years.

Color chips are actual size in foreground. White line is alkali-resistant Armstrong Hydrocord Back.

Technical data on "Tessera" (for samples and complete specs, contact your Armstrong Architectural-Builder Consultant) **composition:** chips are tinted, opaque vinyl, set in a bed of translucent vinyl; **surface resistance:** excellent for grease, alkalis; very good for solvents, detergents; **ease of maintenance:** superior; **static load limits:** 75 psi; **underfoot comfort and quiet:** good; **over-all thickness:** .090"; **wearing-surface thickness:** .058"; **available in:** seven monochromatic colorings; in 6' wide rolls; **installed price:** 75-90¢ per sq. ft.
N.B. The exclusive, alkali-resistant Armstrong Hydrocord Back permits "Tessera" to be used over below-grade and on-grade subfloors, as well as above grade. "Tessera" may also be installed over lightweight aggregate concrete slabs of proper density.

Armstrong Architectural Services. Armstrong is in the unique position of making all types of resilient floors. So Armstrong Architectural-Builder Consultants are not confined to a few specific flooring recommendations. They can help you specify the one floor perfectly suited to each interior. They can also offer you the services of the Armstrong Research Center and the Armstrong Bureau of Interior Decoration. Contact an Architectural-Builder Consultant at your Armstrong District Office. Or write to Armstrong Cork Company, 1604 Rock Street, Lancaster, Pennsylvania.

Takashimaya Inc., Fifth Avenue, NYC
architects: Steinhardt and Thompson, NYC, associated with Junzo Yoshimura, Tokyo
floor: the Tessera Series in Armstrong Vinyl Corlon No. 86535

ARMSTRONG FLOORS *price list*

Approximate installed prices per sq. ft. (Over concrete, minimum area 1000 sq. ft.)

20¢ - 35¢	**35¢ - 45¢**
Linoleum Tile	Linoleum Tile
Asphalt Tile 1/8" (A,B,C,D)	Asphalt Tile 3/16" (C,D)
Asphalt Tile 3/16" (A,B)	Asphalt Tile 1/8", 3/16" (greaseproof)
Linoleum .0625"	Linoleum .125" Battleship
	Cork Tile 3/32"
	Excelon Tile .0625" (Vinyl Asbestos)
45¢ - 60¢	**60¢ - 70¢**
Vinyl Corlon .070"	Vinyl Corlon .070" (Hydrocord Back)
Linoleum .125"	Rubber Tile 1/8"
Cork Tile 1/8"	Cork Tile 3/16"
Excelon Tile 1/8" (Vinyl Asbestos)	Linotile 1/8"
70¢ - 90¢	**90¢ and over**
Vinyl Corlon .090" (Hydrocord Back)	Custom Corlon Tile 3/32", (Homogeneous Vinyl) 1/8"
Rubber Tile 3/16"	Custom Vinyl Cork 1/8"
Custom Corlon Tile 3/32", 1/8" (Homogeneous Vinyl)	Opalesq Vinyl Tile 1/8" (Homogeneous Vinyl)
Cork Tile 5/16"	

Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.6	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	274.9	271.8
1952	278.2	274.8	271.9	265.2	262.2
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
1956	310.8	302.2	320.1	328.6	324.5
1957	318.5	308.3	333.1	345.2	339.8
November 1958	335.9	321.5	358.7	378.2	367.5
December 1958	335.9	321.5	358.7	378.2	367.5
January 1959	337.8	322.5	362.3	383.1	368.8
	% increase over 1939				
January 1959	173.5	163.5	177.2	187.2	183.5

ATLANTA

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.0	224.6	221.3	221.8	223.0
1954	219.6	219.1	233.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
1956	237.2	235.7	241.7	244.4	246.4
1957	241.2	239.0	248.7	252.1	254.7
November 1958	246.5	242.0	259.3	265.9	265.1
December 1958	246.5	242.0	260.2	266.4	266.8
January 1959	247.7	243.2	261.8	268.4	268.3
	% increase over 1939				
January 1959	187.0	192.6	175.3	175.6	183.3

ST. LOUIS

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.0	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
1956	288.7	280.3	287.9	299.2	293.3
1957	292.0	283.4	295.2	307.1	302.9
November 1958	298.9	289.8	307.2	320.6	316.3
December 1958	299.1	290.0	307.7	321.4	316.5
January 1959	301.1	292.6	310.5	324.5	318.4
	% increase over 1939				
January 1959	173.2	173.4	161.6	170.9	167.6

SAN FRANCISCO

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	90.8	86.8	100.6	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.0	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.8	275.0	284.4	279.6
1956	279.0	270.0	288.9	298.6	295.8
1957	286.3	274.4	302.9	315.2	310.7
November 1958	292.0	277.1	315.1	330.2	325.0
December 1958	292.9	278.0	316.5	331.0	325.2
January 1959	293.6	278.5	317.4	332.2	325.9
	% increase over 1939				
January 1959	178.0	180.5	170.3	172.5	179.7

Cost comparisons, as percentage differences, for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

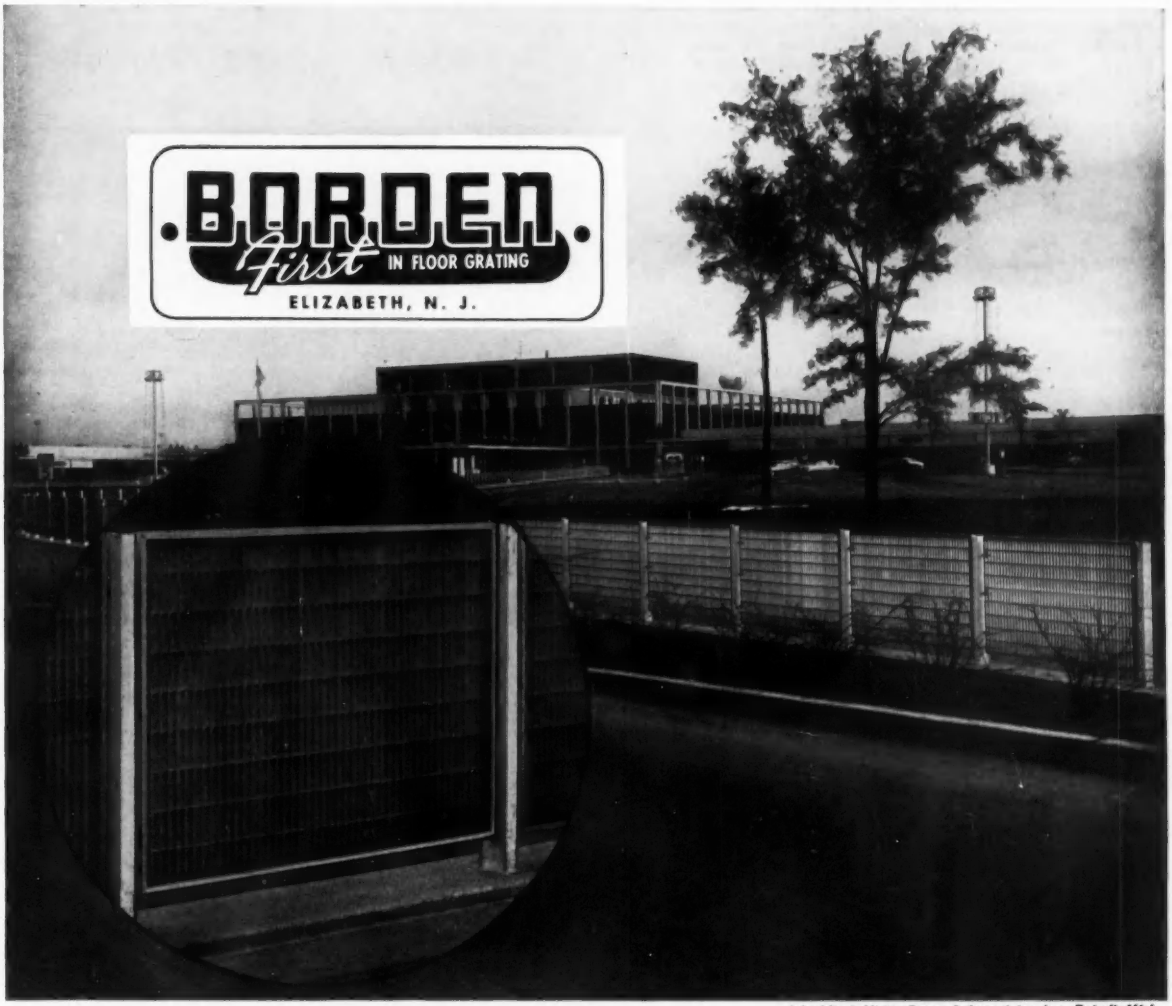
$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



* Architect: Victor Gruen & Associates, Inc., Detroit, Mich.

NEW IDEA FOR FENCES — MAINTENANCE-FREE ALUMINUM GRATING

As shown above, Borden's pressure-locked Aluminum Grating has been used as fencing for the new J. L. Hudson Northland Shopping Center in Detroit, Mich.

The light weight aluminum grating forms a child-proof and maintenance-free fence. The alloys used were selected for their corrosive resistance and high strength.

Thus in the utilization above, Borden has helped open the way for another new field for grating where only standards of quality equal to Borden's will do.

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CONVENT AND ACADEMY of the SACRED HEART, Bloomfield Hills, Mich. Architects: Smith, Hinchman & Grylls Associates. Plumbing Contractors: Harrigan & Reed Heating & Plumbing Co.

New Academy of the Sacred Heart features the compatible color of Briggs Beautyware

Briggs Milton Lavatories specified for Sacred Heart Academy are of fine vitreous china in two sizes, 24"x20" and 20"x18", for 8" combination fittings. 4 colors were used.

Briggs Jupiter Fountains for the Academy are vitreous china wall-hung models, in 3 Beautyware colors.

Briggs Tot Water Closets, vitreous china syphon-action models, 10" high, used in the Academy kindergarten.

Balanced design, functional superiority, the modern beauty of color! The architectural firm of Smith, Hinchman and Grylls Associates found that Briggs Beautyware met each demand in their design for the Academy and Convent of the Sacred Heart. For the girls' academy the architects specified Briggs Beautyware fixtures, many of them in color. For your own commercial and institutional work, you'll find that Briggs Beautyware commercial fixtures offer decided advantages. Specify from a complete easy-to-work-with line of well-balanced designs, created by Harley Earl, Incorporated, for Briggs, in fine high-density vitreous china. Rigid quality controls insure that Briggs fixtures meet every specification, as well as every test of the designer's eye.

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ALBANY, *as the Capital of the great Empire State, is second only to Washington, D.C. as a legislative center. The roots of America are here. It is the oldest existing settlement in the original thirteen states and the second oldest city still operating under its original 1686 charter. In 1754, Benjamin Franklin presented the first plan of Federal Union to the legislature. Four former U. S. Presidents resided in Albany as governors: Martin Van Buren, Theodore Roosevelt, Grover Cleveland and Franklin D. Roosevelt. As a major transportation center for the northeast and an important overseas shipping port on the Hudson River, Albany has also attracted a variety of industries. Otis has a long standing "participant's" interest in Albany's skyline growth. Over 77% of its elevators are the world's finest. They're by OTIS.*

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Required Reading

Plastic Design, Now Approved

PLASTIC DESIGN IN STEEL. *American Institute of Steel Construction, 101 Park Ave., New York 17. 94 pp., illus. $4.*

PLASTIC DESIGN OF STEEL FRAMES. *By Lynn S. Beedle. John Wiley & Sons, 440 Fourth Ave., New York 16. 406 pp., illus. $13.*

BY EDWARD COHEN
Associate, Ammann & Whitney, Consulting Engineers

"Rules for Plastic Design and Fabrication" have been adopted by the American Institute of Steel Construction, thus making plastic design an approved method for rigid frame building structures except in areas where further action is required by local building code authorities. The application of these recommendations to rigid frame structures will always result in economies in either required weight of steel or in simplified fabrication or both. Although the application of the new recommendations is limited to the design of continuous beams subject to normal dead and live loads (crane girders are excluded; bridges are not included) and one- and two-story rigid frame buildings, the designer of such rigid frame structures as are covered by the new A.I.S.C. recommendations is under a strong obligation to his clients to use the revised design methods and achieve maximum economy. The use of plastic design methods is expected to make welded rigid frame construction economically more competitive and increase its use. However, the combination of shop welding with high strength bolted field connections still appears to be economical and generally desirable.

Though structures designed by the plastic method will not look strikingly different from elastically designed structures, they can generally be expected to be more slender and to make greater use of uniform sections. The recommendations require that structures be designed with a plastic strength equal to 1.85 times the given live load and dead load. When wind or earthquake forces are added, the required strength-load ratio is reduced to 1.40. These values are closely comparable to the present factors of safety for simple wide flange beams designed elastically at an allowable stress of 20,000 psi for dead and live loads and allowing a 33⅓ per cent increase in allowable stress when wind and earthquake forces are added. Trusses and axially loaded members designed elastically for the same allowable stresses have strength-load ratios about 12 per cent less. Elastically designed rigid frames, continuous beams, wide flange beams bending about the weak axis and other flexural members with heavy webs, solid or circular cross sections, often have factors of safety which vary considerably and are substantially greater than that of the simply supported wide flange beam. Plastic design will eliminate this excess and unnecessary strength with resultant economy. It means that continuous or rigid frame structures will no longer be stronger than simple structures and that this reserve is no longer available to cover errors in design and fabrication.

With plastic design particular attention must be given to end connections and lateral bracing, since the adequacy of these items is indispen-

continued on page 64

The Architect as Practitioner

HANDBOOK OF ARCHITECTURAL PRACTICE. *Edited by Clinton H. Cowgill, F.A.I.A. American Institute of Architects, 1735 New York Ave., N.W., Washington 6. 516 pp. (8th rev. ed.). $8.*

BY DUDLEY HUNT, JR., A.I.A.

The *Handbook* has grown mightily in size and usefulness since the publication of its first edition in 1920. This latest, eighth, edition contains about half again as many pages as the seventh. The new book has been more completely re-studied, reorganized, and revised than any previous edition. The resulting volume should prove to be of utmost value as a text and reference for all concerned with architecture, including clients (and potential clients).

The book has an improved makeup and should be easier to use, once one has become accustomed to the absence of consecutive page numbers (chapters are subdivided into sections, and these are numbered within themselves in a manner reminiscent of the decimal system of organization for specifications). The lack of a table of contents in the usual place is at first disconcerting, but its function is performed admirably by a combined contents-edge index on the back flyleaf.

The *Handbook* is organized into three major parts (Books I, II, III) and an appendix. Book I, "Building and Architecture," is concerned with a general survey of architecture, legal considerations, and architect-owner agreements. Book II, "Office Procedure," deals with personnel and office management problems, development of projects, competitions, building finance, and the like. Book III, "Project Procedures," covers project management, schematics, preliminary design, working drawings and specification procedures, estimating, construction administration, and so on. The Appendix, which constitutes more than half the book, contains much information of value. This includes reference sources, forms (a very complete collection of A.I.A. standard forms and many others of interest), hypothetical balance sheets for various types of buildings, symbol charts, bibliography, etc.

Of particular interest are the new materials included and the more complete treatment of such subjects as partnerships, building finance, accounting, competition procedures, and information from the A.I.A. Survey of Office Practice, conducted in 1956. Also of interest is the Architect's Project Book, shown in its entirety, which combines the functions of office diary, directory of those connected with the work, chronological record of transactions, and financial statements, thus making available in one place a complete record of all transactions on a building project. Surely the availability of stock forms of this sort would be welcomed by many practitioners.

The editor and his consultants have recognized that the *Handbook*, in the attempt to cover such a vast amount of material, must be straightforward and uniform in its approach and therefore must necessarily serve only as a general guide to principles without exhaustive treatment of details. Perhaps a loose-leaf supplement is needed to present new material as it appears between revisions of the *Handbook*, creative new approaches to practice problems, and out-of-the-ordinary methods of handling the myriad details of 20th-century architectural practice.

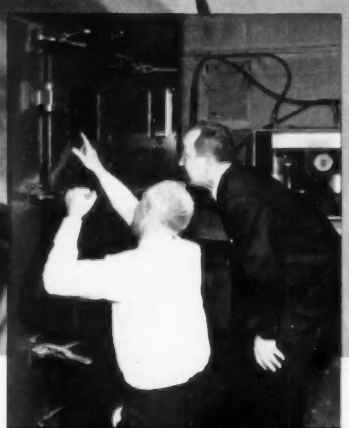
Architects, 1740-1952

BIOGRAPHICAL DICTIONARY OF AMERICAN ARCHITECTS (DECEASED). *By Henry F. Withey, A.I.A., and Elsie Rathburn Withey. New Age Publishing Co., 1542 Glendale Blvd., Los Angeles 26. 678 pp. $15.*

Thumbing through this compilation of the biographies of almost 2000 architects of this country's past is like reading the dramatis personae of U.S. architectural events of the last 200 years. Here are the old familiar names of the early great and the equally familiar (and sometimes more easily forgotten) names of more recently departed figures.

Until the *American Architects Di-*

continued on page 358



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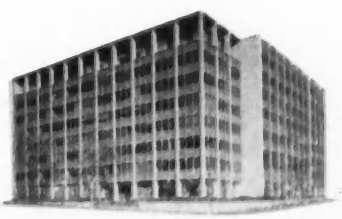
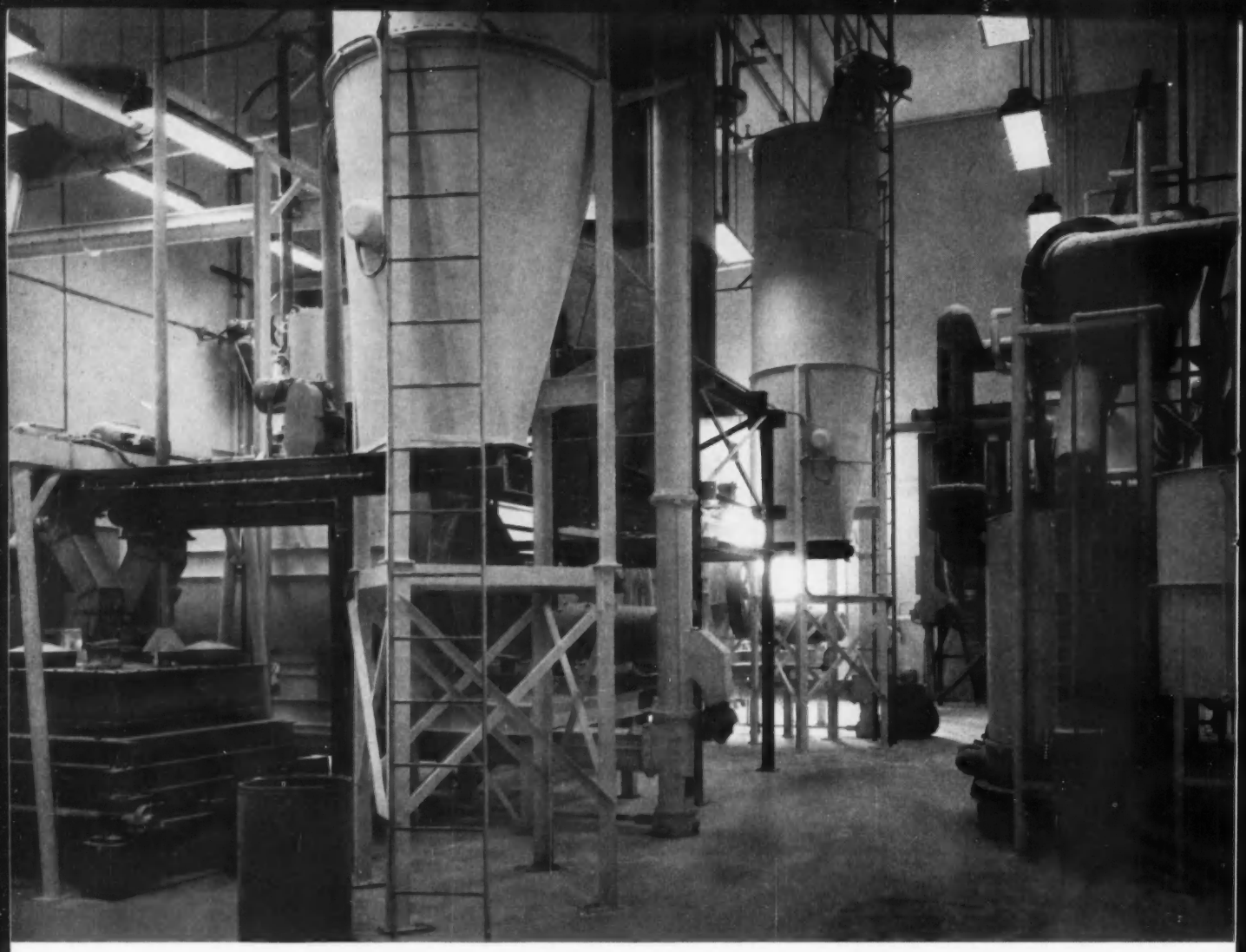
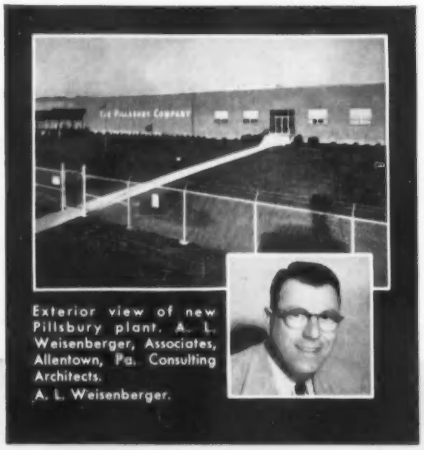


N.E.A. Building in Washington, D.C., has Adlake curtain wall and reversible windows. Architect: Joseph Saunders, Washington, D.C. General Contractor: Joseph F. Nebel Company, Inc., Washington, D.C.



DEVOE HELPS COLOR PLAN PILLSBURY'S NEW EAST GREENVILLE, PA., PLANT!



Exterior view of new Pillsbury plant. A. L. Weisenberger, Associates, Allentown, Pa. Consulting Architects.
A. L. Weisenberger.

Devoe helped save countless man-hours and headaches in color planning Pillsbury Mills' new plant at East Greenville, Pa., at no cost or obligation.

Under the direction of Mr. Russell Battern, Pillsbury Project Engineer, the painting contractors, Diamond & Dectis, of Bethlehem, Pa., applied Devoe paints to 160,000 sq. ft. of ceiling surfaces and 100,000 sq. ft. of wall surfaces: in the processing, warehousing, and tower areas, "Memphis Can" section, the office, and the cafeteria.

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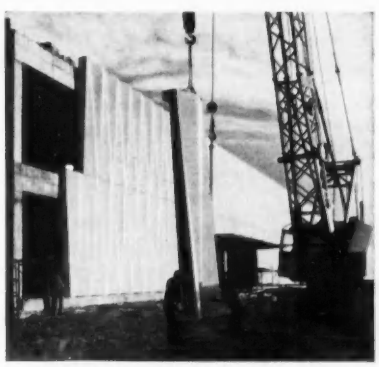
Gimbels buys a concrete curtain made with Atlas White Cement



Gimbels, Mayfair Shopping Center, Wauwatosa, Wisconsin:

Associated Architects: Grassold-Johnson & Associates, Milwaukee, Wis. • Welton Becket & Associates, Los Angeles, Calif.

Contractor: Hunzinger Construction Company, Milwaukee, Wis.

Architectural Panels: Badger Concrete Company, Oshkosh, Wis.

"USS" and "Atlas" are registered trademarks

A curtain wall of precast concrete panels lends an unusual faceted appearance to the exterior of Gimbels new suburban store in Wisconsin. The white concrete facing of the panels is mosaic in character, consisting of exposed white quartz aggregate and Atlas White portland cement. The units were easily and quickly anchored in position to create a beautiful facade that is permanent, weathertight and maintenance-free.

Architects are rediscovering the economy and versatility of precast reinforced concrete panels in designing today's modern structures. Such panels can be designed in a variety of sizes, shapes, colors or textures to meet any specification.

For more information on the use of Atlas White portland cement in architectural concrete, write Universal Atlas, 100 Park Avenue, New York 17, N. Y. WF-47

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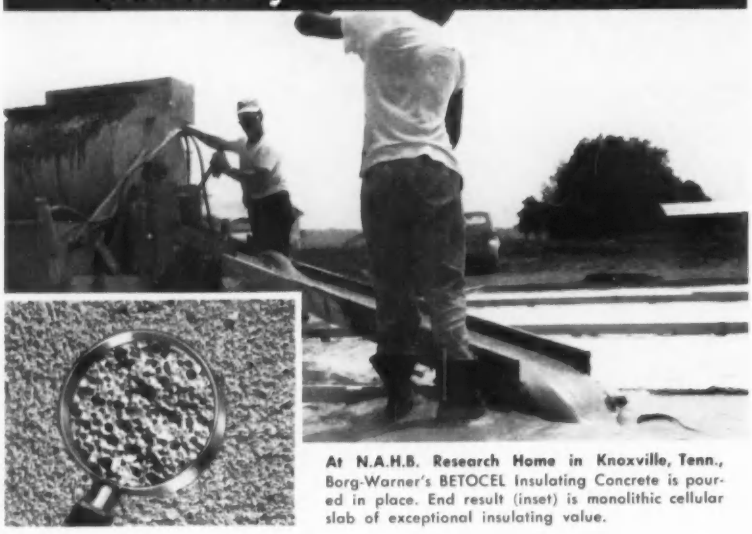

At N.A.H.B. Research Home in Knoxville, Tenn., Borg-Warner's BETOCEL Insulating Concrete is poured in place. End result (inset) is monolithic cellular slab of exceptional insulating value.

Advanced type of cellular concrete gives improved Insulated Slab

Problem: Seeking new construction ideas, the building of two test homes was sponsored by the Research Institute of the National Association of Homebuilders. Among the primary features sought was a new and better material for poured concrete slabs.

Solution: After a careful investigation, the slabs of *both* test homes were poured with Borg-Warner's BETOCEL Cellular Insulating Concrete.

Results: Not only were the insulating requirements met and surpassed, but there were installation savings as well. Perimeter insulation was eliminated . . . as was mesh in the slab itself. And, in the words of one test builder, "The floor should be extremely warm because this 4 inches of insulating concrete is roughly the equivalent of 1½" of rock wool or fiber glass!"

Results like this typify the benefits *you* may well realize with BETOCEL Insulating Concrete. Not just in slab construction, but in roof insulation and precast jobs as well does BETOCEL pay off. Get full details now. Start by sending for a complete report on the research project above.

Quickly, easily installed. The wet BETOCEL mix has consistency of thick malted milk. On installation, it sets up to form a unique cellular structure providing all these advantages:

- controlled density
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Required Reading

Steel . . . *cont. from page 60*

sable to the strength of the overall structure. This is reflected in the rule that the plastic strength of welds, rivets, and bolts is taken at 1.65 times the allowable stresses for elastic design, thus reducing the design strength of these items relative to flexural members by about 14 per cent.

A new and important requirement for fabrication seeks to avoid any possibility of brittle type failures. The recommendations specify that in the regions of the plastic hinges sheared edges are to be avoided or shall be finished smooth and holes are to be subpunched and then drilled or reamed to full size such as are found in multi-story buildings. Heavily loaded columns are excluded from these recommendations. However, the strength calculation of beam-columns with axial loads less than 60 per cent of the yield load has been put on a much more rational basis, with due consideration being given to the end conditions. In certain cases the new rules allow axial compressive loads up to 15 per cent of the axial yield strength without any reduction in the available moment capacity.

Although it may not be immediately apparent to him, the use of plastic design will generally simplify the designer's work. Fundamentally, plastic analysis of frames is a simpler operation than elastic analysis, the difference being most apparent when tables and charts are not available. In addition, the final results are not affected by temperature stresses or settlements except under unusual conditions. In many cases the number of alternate loading conditions required for design may be reduced.

The plastic design manual contains, in addition to the two-page "Rules," extensive explanations, numerical design examples, charts, and tables to assist the designer. Although the manual includes all the information necessary for standard designs, most engineers not fully acquainted with this new concept of design will find it desirable to refer to a more detailed text on plastic design which provides more background information to aid in obtaining a better understanding of the method and in dealing with non-typical situations.

Such a book is the one by Professor Beedle, an excellent text in accordance with the new A.I.S.C. "Rules" which should be carefully read by an engineer planning to enter upon a plastic frame design.

continued on page 358

ARCHITECTURAL RECORD *Western Section*©

EDITOR: *Elisabeth Kendall Thompson, A.I.A.*

2877 Shasta Road, Berkeley 8, California

Making the Law Work for Beauty

An unusual bill is under consideration in the Washington State legislature this year. It proposes the creation of a state art commission to advise on matters of statewide esthetic implication, and in such a proposal are the seeds of an important means for handling certain aspects of these problems—like highways, freeways, bridges, billboards—which extend beyond the jurisdiction of municipal art commissions but which impress themselves indelibly on the lives of all the people.

Like a municipal art commission, the state art commission would be advisory; it could not take action but it could make recommendations. Its peculiar advantage would be that it would be an official body from which official advice could be sought in the normal course of carrying out the state's business.

In the specific case of Washington, such a commission has a special meaning at this time, for Washington is in the throes of readying itself to play host in 1961 to many thousands of visitors to its international exposition. A state art commission charged with "studying, planning and advising," and able to "make such recommendations as it deems proper for the beautification and cultural development of the state," would serve to keep the proper esthetic perspective throughout the state.

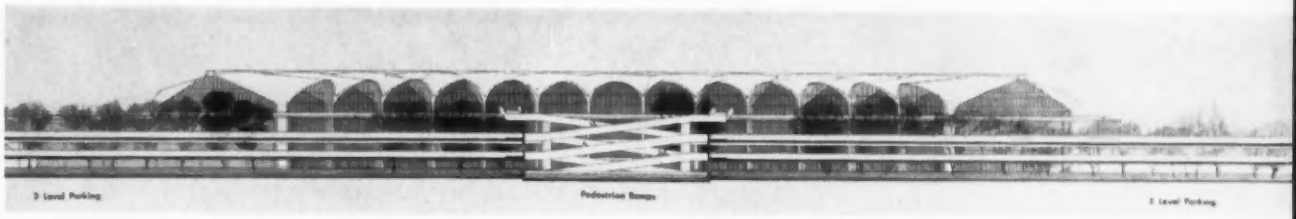
Not the least of the recommendations such a commission could make might have to do with control and regulation of billboards along highways. Since no other official government agency is specifically charged with considering the effect on the citizen's esthetic sensibilities of the rampant extension to the countryside of this less-than-gentle means of sales persuasion, this could be a prime target, if not the basic motivation for state art commissions in the Western States.

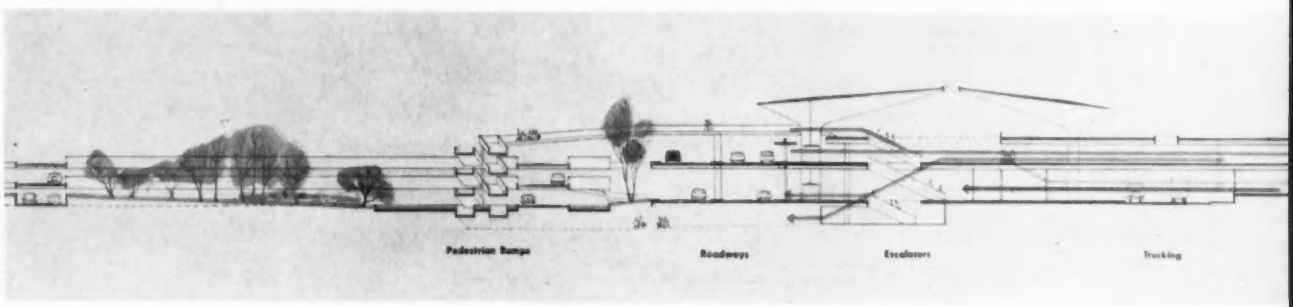
Although the Federal government has enacted legislation controlling billboards and offering an inducement to the states to enact similar legislation, the fight on the state level faces serious opposition. In one state already the legislation has suffered a bad setback—for lack of a clear-cut policy on billboard control. It is a truism that a definite program will get the votes even though its basic premise may be less than tenable, while a more valid approach will fail because it is not firmly defined. A state art commission, had one existed there, might have offered a definite policy.

A state art commission would be concerned with many other aspects of the state's esthetic development, of course. Allied Arts of Seattle, initiator of the proposal in the state of Washington, suggests that the commission be made up of 15 members, who would serve without pay, representing architecture, painting, sculpture, music, landscape architecture, crafts, literature, graphic arts, theater arts, the dance and other branches of the arts, which would pretty well insure consideration of all facets of the state's cultural environment.

For the rest of the Western states, the outcome of the Washington proposal will be of paramount interest. If a state art commission is created, its performance will be the test of the extension of the idea. E.K.T.

Model of master plan shows existing terminal building flanked by new terminals, with three-level parking structure in center. Automobile and pedestrian ramps serve and planes load from both levels of terminal complex; passengers may travel from plane to car on single level, as little a distance as 1000 ft





SAN FRANCISCO UPDATES ITS AIRPORT FOR JETS

Welton Becket and Associates
Architects and Engineers

The jet age for passenger travel, dramatically ushered in elsewhere the first of the year, touched San Francisco only last month; but anticipation of consequent future needs had long before spurred the city toward planning for much needed expansion. A $25,000,000 program of improvements and additions, assured by a bond issue in 1956, is well along in its first stages; but the most important changes have been awaiting the preparation of a master plan which would guide expansion to nearly double, and eventually triple, the airport's present passenger capacity.

Just such a plan—recently approved by the city—envisions two new terminals so located as to supplement the present terminal's facilities and to make the passenger's arrival or departure a more convenient and pleasant experience. The central location of the three-level parking garage, surrounded by the three terminals, minimizes the access process; and pedestrian ramps and concourses permit passengers to board planes from either level of the new buildings.

One of the terminals is to be built as soon as possible in order to expand airport facilities to meet the traffic requirements of 1965. Present goal for the other is 1970, when it is estimated that the annual passenger count will reach 10,000,000.

G/H Photographers

1

HONOR AWARDS

1. Library for the University of Portland, Portland: Wolff & Zimmer, architects

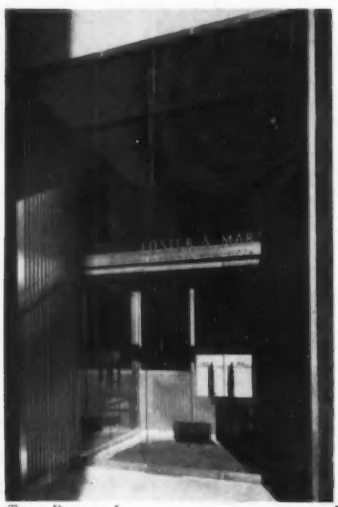
2. Apartment Building for Thomas K. Welch and G. T. Dussin, Portland: Donald Blair, John Reese, Saul Zaik, architects

2

NINE BUILDINGS HONORED IN OREGON AWARDS PROGRAM

Nine buildings by eight architects received honors in the Oregon A.I.A. chapter's annual awards program. For the first time a Citizen Award was presented for contribution to art, music, city planning, or civic betterment, and a Craftsman Award for especially significant contribution to architecture.

Members of the jury were architects Walter Gordon, Dean of the School of Architecture and Allied Arts at the University of Oregon, Robert Wilmsen, Eugene, Ore., and Fred Bassetti, Seattle.



3 Tom Burns, Jr.

AWARDS OF MERIT

3. Office Building for Foster and Marshall, Portland: William L. Fletcher, architect

4. Ashland, Ore., Branch of the U. S. National Bank of Portland: Jacobberger, Stanton, Franks and Norman, architects

5. Restaurant for George Sahr and Henry Walther, Portland: William L. Fletcher, architect

6. Central Y.W.C.A., Portland: Stanton, Boles, Maguire and Church, architects

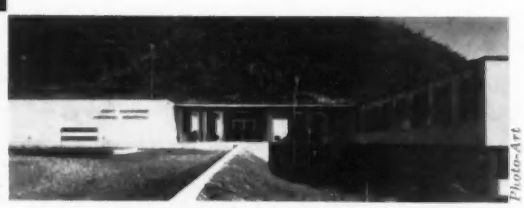
7. West Shoshone General Hospital, Kellogg, Idaho: Skidmore, Owings & Merrill, architects

8. Noel Davis Office Building for the Hartford Insurance Co., Portland: William L. Fletcher, architect

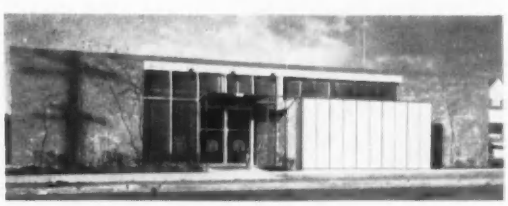
9. Residence for Mr. and Mrs. Henry L. Corbett, Jr., near Metolius, Ore.: Lewis Crutcher, architect

4 Memory Lane Studio

5 Tom Burns, Jr.



7 Photo-Art



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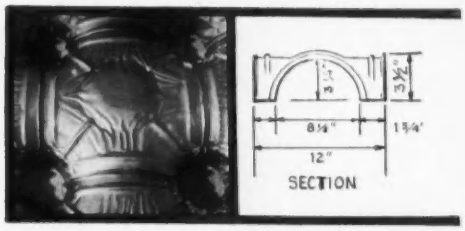
6 Tom Burns, Jr.

9 Tom Burns, Jr.

THE NATURAL THERMAL

Environment For Education



1. UNDERGROUND AIR SUPPLY
2. AIR FLOW THROUGH FLOOR
3. 1½" CONCRETE OVER FORMS
4. 2" SCREEDED PAD
5. AIR OUTLET
6. RADIATION THROUGH FLOOR

- PERMANENT TEMPERATE RADIANT FLOOR PANEL
- CONTINUOUS WINDOW WALL CONVECTION CURTAIN
- DRAFTLESS SILENT POSITIVE MECHANICAL VENTILATION

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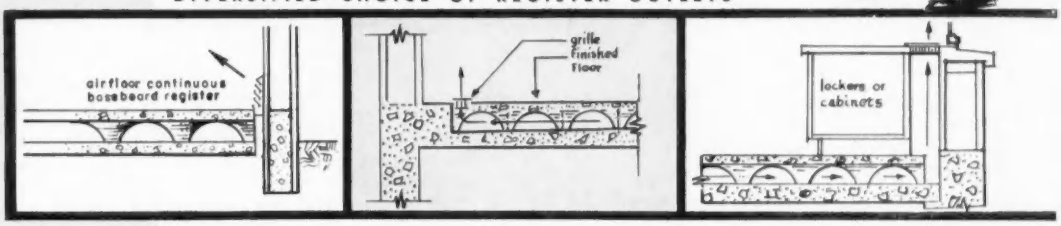

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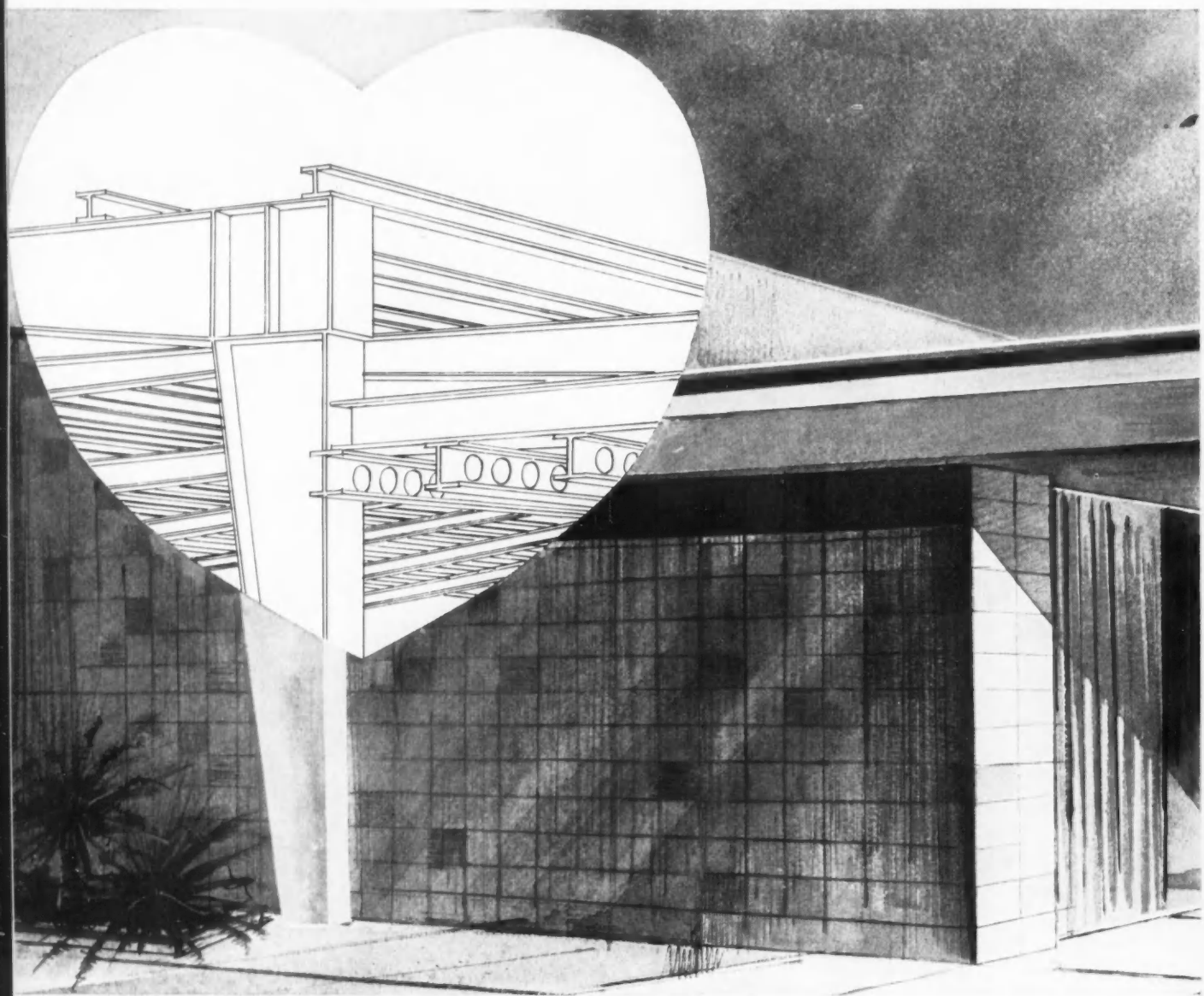

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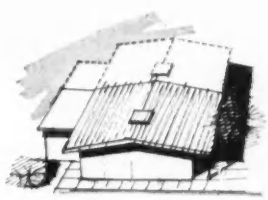

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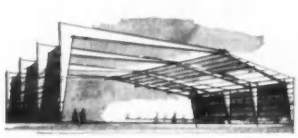

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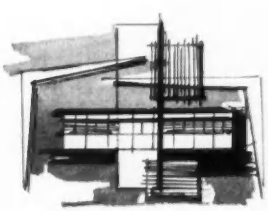

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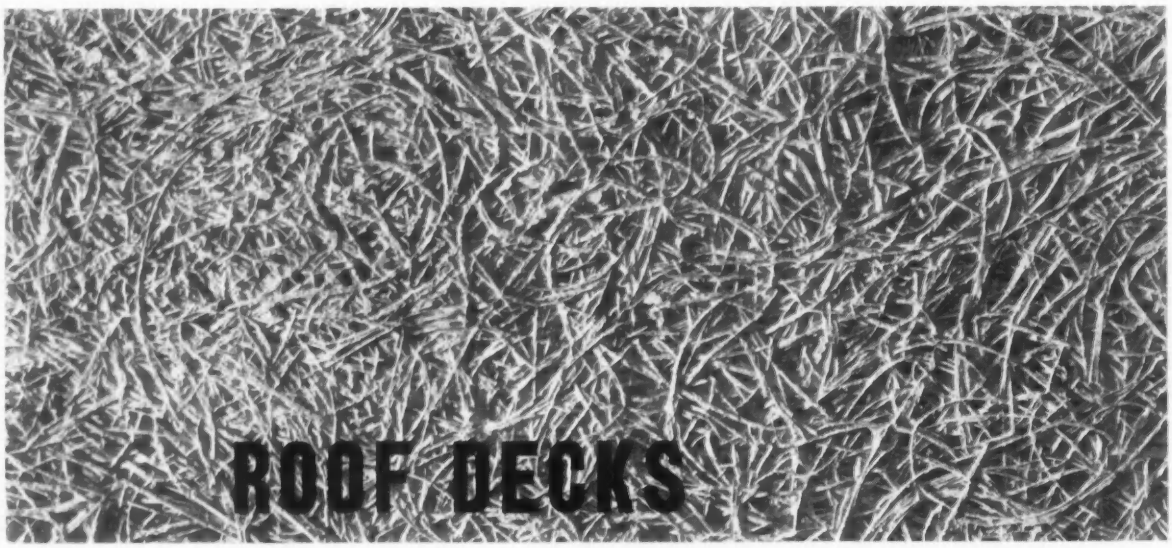

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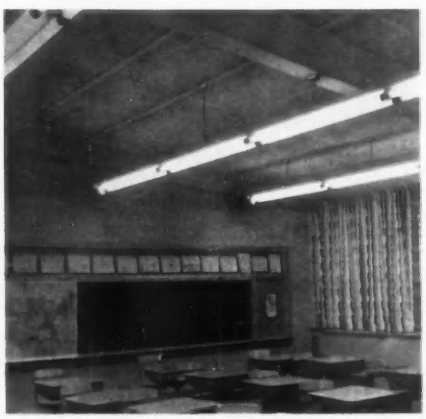

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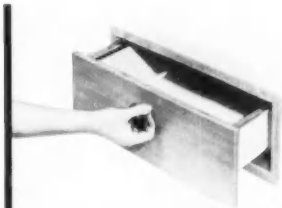

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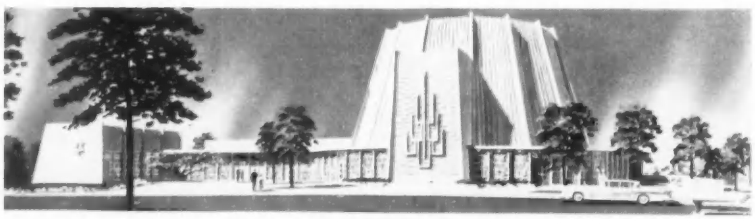
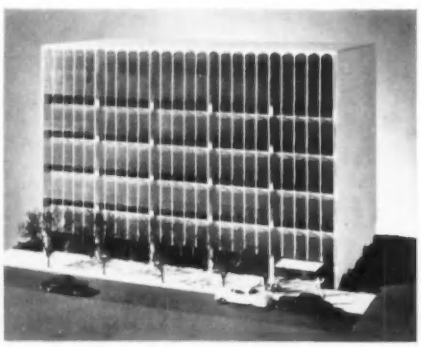
Western Buildings in the News

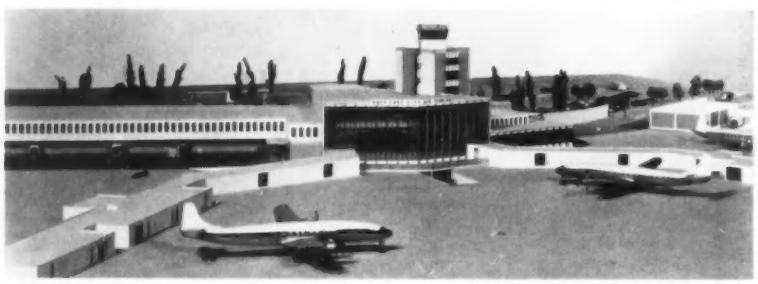
MOTEL AND RESORT: Three two-story units grouped around court with swimming pool are first half of what will ultimately comprise "The Uplander" motel and resort in Upland, Calif. All rooms open onto garden court, each has a loggia. Thornton Ladd is architect; John Field Kelsey, project architect



TEMPLE FOR SEATTLE SYNAGOGUE: The new Temple De Hirsch's circular plan (actually, 14-sided) permits a clear view of the Ark. Against ribbed dome on street elevation is organ loft whose textured wall forms background for bronze menorah. Stained glass panels form walls for lower part of sanctuary. B. Marcus Priteca and Detlie & Peck, Architects



INSURANCE COMPANY OFFICES: Gold anodized grille which faces five-story building for Independence Life Insurance Company of America in Pasadena, Calif., is designed to cut direct sunlight but permit views to outside through open strips between grille panels. Vertical aluminum strips run height of building façade. Building will cost estimated $1,250,000. Welton Becket & Associates are architects and engineers



AIRPORT TERMINAL BUILDING: Salt Lake City's presently inadequate airport terminal is to be replaced shortly with a new building planned to permit further expansion as needed in future. From waiting room on first floor and restaurant on third, view is toward city, Wasatch mountains and airplane ramps. Ashton, Evans and Brazier, architects; H. C. Hughes, Structural Engineer; P. H. Koch, mechanical engineer; L. B. Gawan, electrical engineer

STUDENT CENTER: (*at right*) First two units in University of California's new Student Center on the Berkeley campus will be cafeteria (with folded plate roof) and union building (left center). Site clearing is under way, completion is due in Fall 1960. Vernon DeMars and Donald L. Hardison, Architects Associated; Vandament and Darmstad, mechanical engineers; Pregnoff and Matheu, structural engineers; Fred Schmid & Associates, special consultants

kitchen color plan.

lessly for years.

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problem solution

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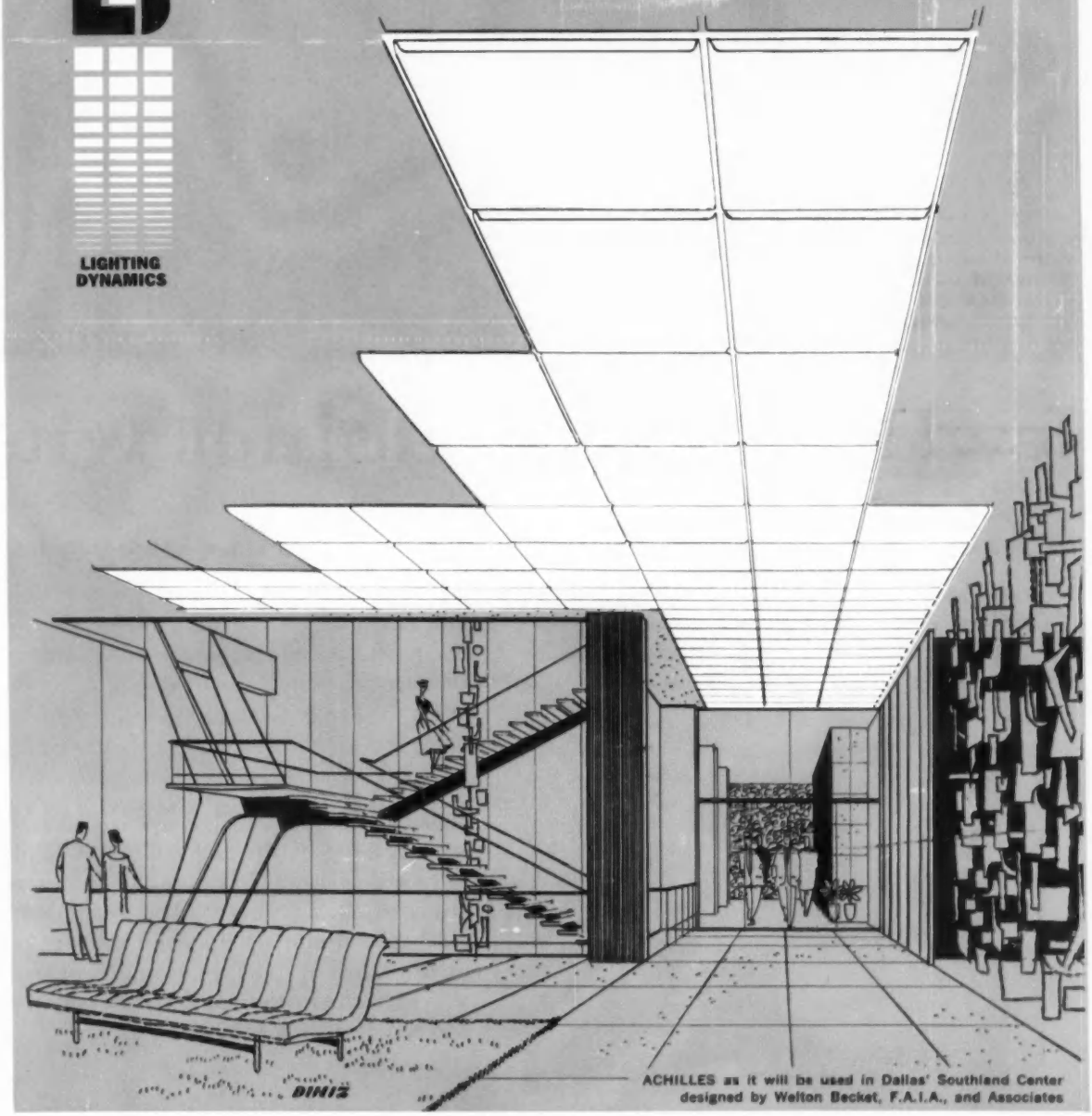
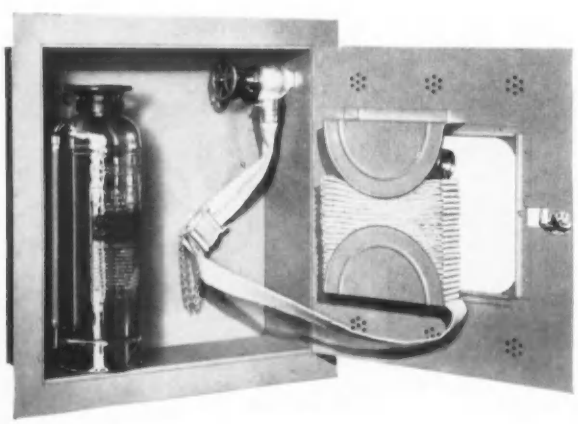


ACHILLES as it will be used in Dallas' Southland Center designed by Welton Becket, F.A.I.A., and Associates

New! Fire hose cabinet with

RACK SWINGS FULL 180°

Now, when seconds count, there's no delay in fire-fighting . . . user just grabs the hose and runs! The hose is racked on the *door* instead of inside the cabinet. This door swings out—a full 180°—



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and the hose can't snag when it's needed most. The new Allenco Hozegard cabinet is the first fire hose cabinet equipment to be *completely* Underwriters listed! Each Hozegard installation saves 25% to 30% by eliminating the expensive pin-type rack and the time needed to install the hose on it.

Allenco Hozegard cabinets are available with or without extinguishers and with Fire Department valve when desired. There is a choice of sizes and styles to fill most every requirement. All have steel cabinet with frame welded to body . . . hold up to 100 feet of 1½" linen hose. When specified with exclusive Hose Clip, the entire unit—cabinet and equipment—is 100% U/L listed.

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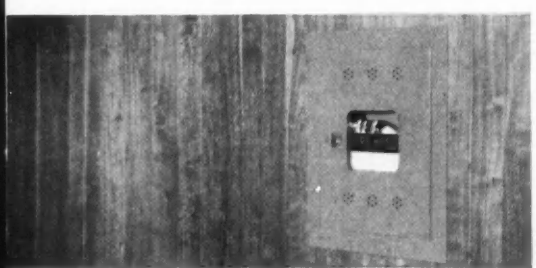
FOUL-PROOF door rack



NOTE TO THE DESIGNER

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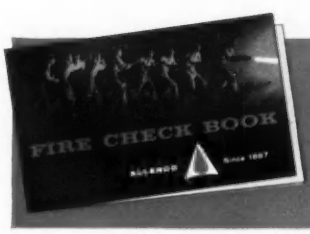
Requiring 35% less area—less depth, the compact Hozegard cabinet can be flush-mounted in any wall, or in the floor! The cabinet door is available in several styles and choice of 3 trims . . . custom-finished at the factory or on-the-job to your specifications.

Free swinging door rack means foul-proof withdrawal and ready aiming at fire.

Exclusive hose clip makes cabinet semi-automatic—perfect for one-man operation.

Tamper-proof glass latch shield is scored for safe, easy breaking in emergency.



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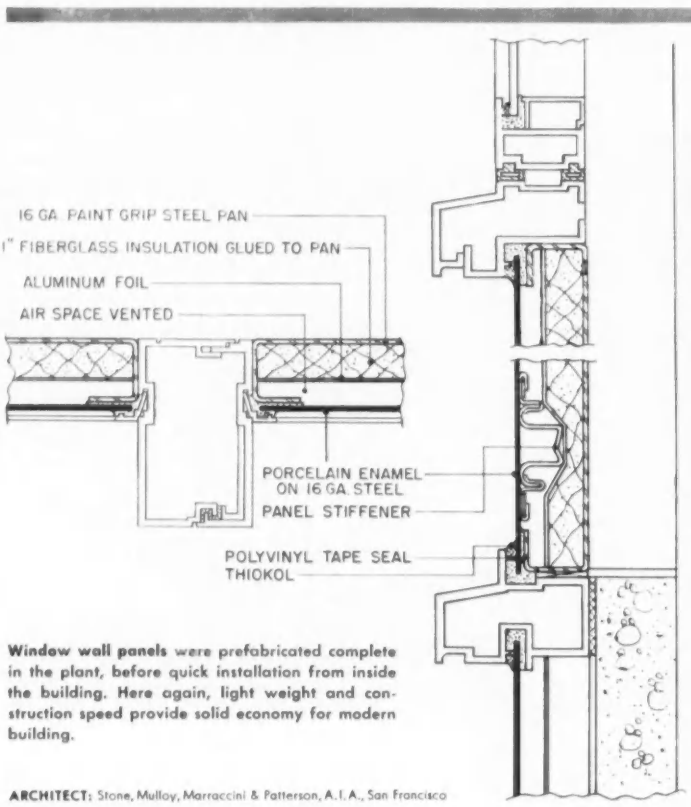
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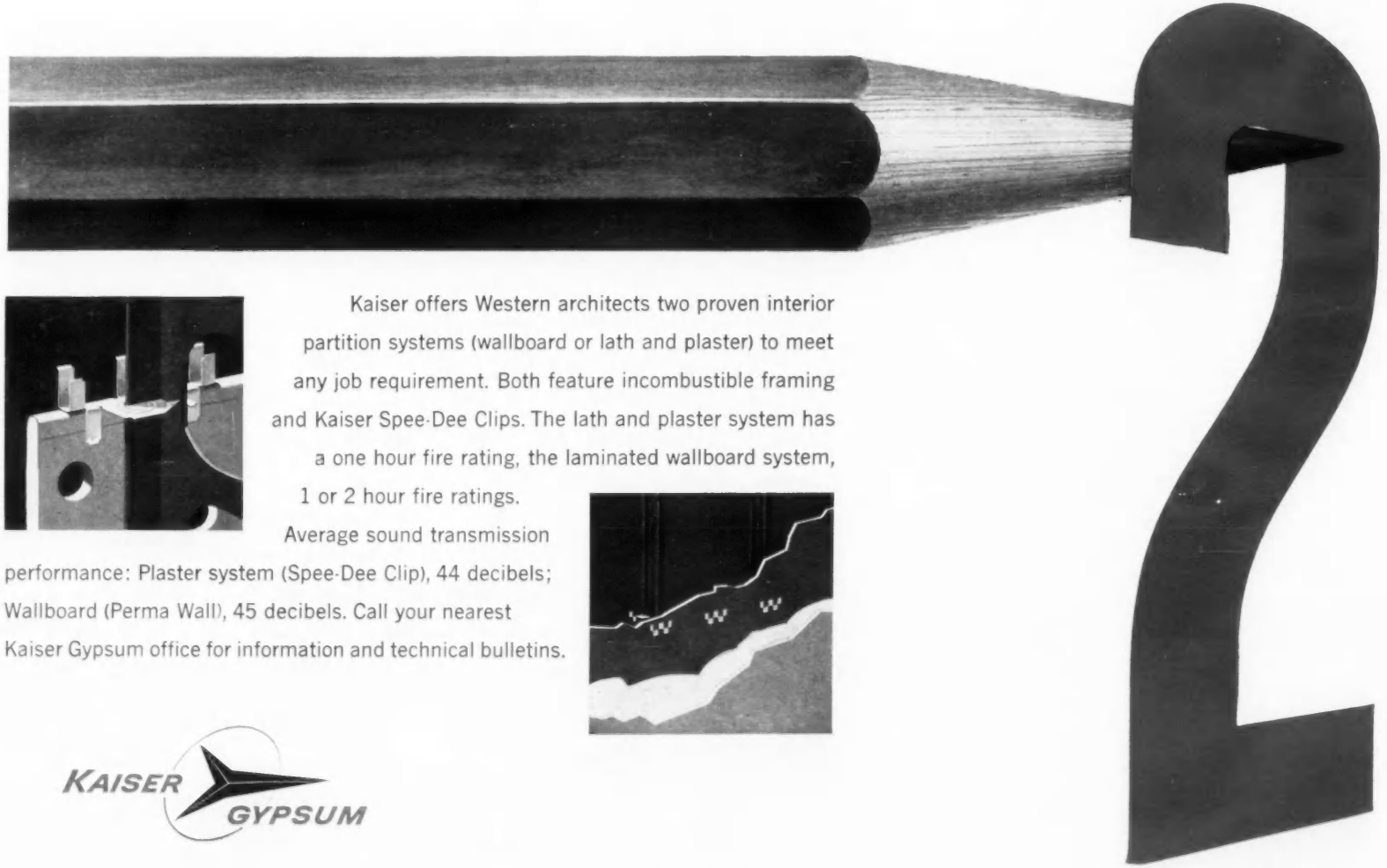

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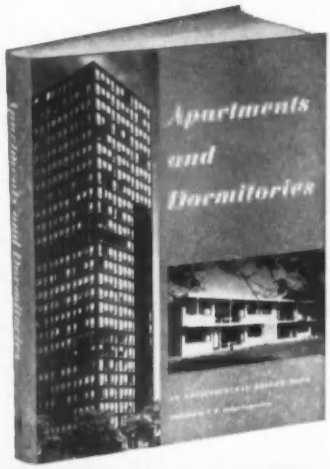

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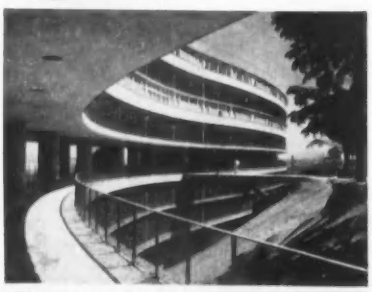

Here is the latest, most complete source of information on this expanding building type. In expertly-authored text and over 475 fine illustrations are shown some 51 multiple dwellings of all sizes, plus additional material on social and technical considerations. The book is divided into five major sections:

1. **BUILDING MULTIPLE DWELLINGS**
   Discusses housing patterns and the economics of shelter. Presents technical studies on heating, vertical transportation, cost-saving apartment designs, and engineering details.
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   After an introduction which treats of the broader aspects of community planning, there are studies of four large-scale projects, each housing thousands of families in a balanced community of high-rise and low-rise apartments, row houses, and individual houses.
3. **APARTMENTS: LARGE PROJECTS**
   Twenty-two large buildings or groups of buildings are shown here. The story behind each is presented — how it was financed, what type of tenants it was designed for, site problems, other design considerations. Floor plans show you unusual corridor and elevator-shaft arrangements, flexible layouts, other idea-provoking details. Numerous interior and exterior photographs are included.
4. **APARTMENTS: SMALL PROJECTS**
   Ten-family buildings, two-family houses, duplexes, and a hunting club are shown here. Many of these buildings are on unusual sites, and their purposes vary — some are for single persons, some are for faculty members, some are public housing, and some are in the luxury class.
5. **CAMPUS DORMITORIES AND APARTMENTS**
   Opens with a discussion of dormitory design which warns of the danger of cell-like campus housing, and explains the architectural needs of the student. Eleven projects are shown, including dormitories at men's and women's colleges, and housing for faculty members and married students.

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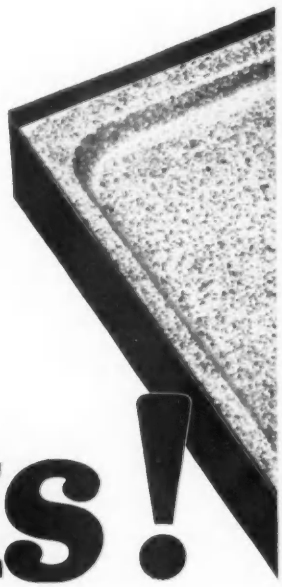

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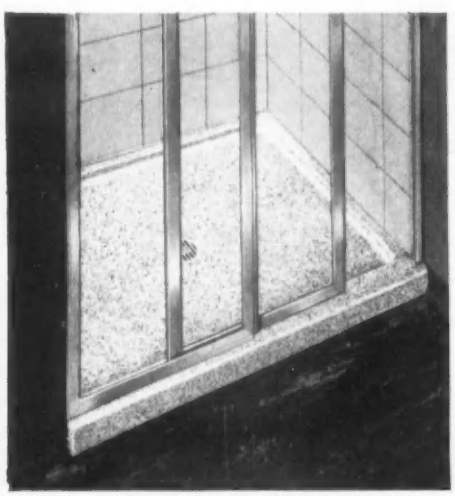

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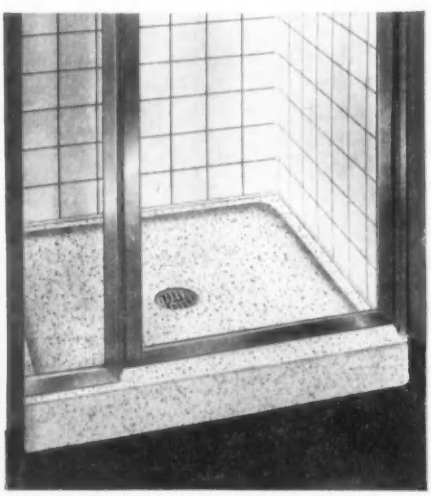

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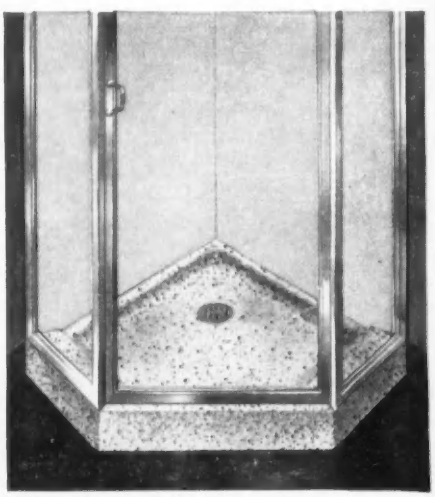

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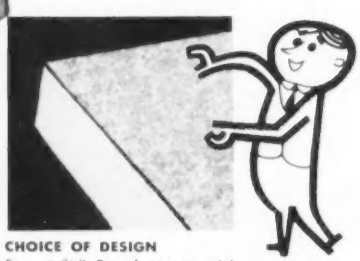

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Oregon
Church Architecture Conference

A two-day conference on Church Architecture and Building was sponsored February 24-25 in Portland, Oregon, by the Oregon Council of Churches, the Department of Church Building of the National Council of Churches, the Portland Council of Churches, and the A.I.A.'s Oregon chapter.

Participants—including architects, clergy and a predominant number of church laymen—came from Oregon, Washington, Idaho, and Canada. Addresses and panel discussions touched upon many problems, philosophical as well as technical, involved in church design and construction in the current age.

Portland architects who participated in the program included Warren Weber, Kurt Schuette, Thomas Potter, Kenneth Richardson, Glenn Stanton, F.A.I.A., Donald W. Edmundson, John Foster, Donald Blair and Robert W. Fritsch. Robert L. Durham of Seattle spoke on "Using Architecture to Create Worshipful Churches."

New Stadia for Dodgers and Giants

The West's recently acquired major league baseball teams are going to have permanent "homes" in the foreseeable future, now that legal problems have been cleared for a Dodger stadium in Los Angeles, and the Giants' stadium near San Francisco is under construction.

Although neither team had encountered clear sailing in getting appropriate stadia, San Francisco's Giants managed to get theirs started despite a Grand Jury investigation and the threat of a contractor's shutdown. The Dodgers, lured to the West Coast in 1957 partly by Los Angeles' offer to make available a 300-acre site in Chavez Ravine, were less fortunate: it has taken almost two years to untangle pertinent legal problems.

Of the promised 300 acres the city now owns some 200, most of which it acquired from the Los Angeles Housing Authority in 1955. The remaining 100 acres will have to be bought—a major source of controversy. In return for the gift of the site, the Dodgers must construct their own stadium and build recreational facilities needed by the city on 40 of the 300 acres.

Many months of litigation have at last culminated in a favorable ruling by the State Supreme Court—taken as assurance that the Dodgers can soon expect to break ground. Their stadium will accommodate 52,000

continued on page 64-22

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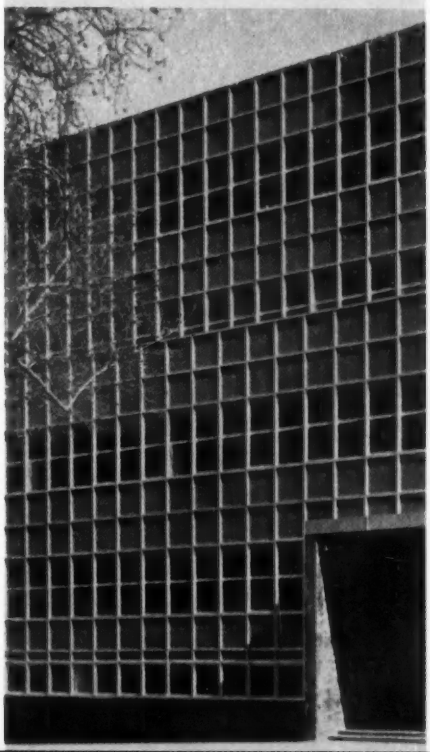

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Stadia *continued from page 64-20*

spectators and provide parking for 17,000 automobiles. Elaborate landscaping will be a special feature.

Acquisition of the San Francisco Giants' site at Candlestick Point has also been subject to public bombardment, both because of the location and because of the speed with which the city negotiated the transaction. In this case, however, construction was already under way when a heated Grand Jury investigation was initiated.

The stadium, designed by architect John S. Bolles, will seat 45,000 people and can be converted into an 80,000 seat football stadium. A special feature is heating by steam pipes imbedded in the concrete floor of the lower level. The ballpark's name, selected by popular vote but still the subject of controversy, is Candelstick Park, from Candlestick Point, location of the stadium.

Bunker Hill Redevelopment Approved

Los Angeles' long delayed $315 million Bunker Hill redevelopment came one step nearer to an actual start on February 9 when the City Council's unanimous approval climaxed six months of voluminous study and hearings.

The mammoth project, designed to fashion a modern heart-of-the-city addition from 136 acres of declared slum near the Civic Center, met long and determined opposition by property owners who wanted to handle their own redevelopment and rehabilitation despite—and in some cases because of—the considerable age of their buildings. The majority of these date from 1916 or before; some rank as "historic" residential structures. The low number and insignificant character of building permits issued since 1956 belied the property owners' potential as developers, and the Community Redevelopment Agency, acting for the city, won its case.

Core of the project will be three large plazas separated by streets and interconnected by a series of pedestrian overpasses, escalators, and moving sidewalks. Plans include a 24-acre residential plaza containing 3100 apartment units, a 16-acre plaza for commercial buildings, a six-acre hotel site, a four-acre shopping and office complex, and a 14-acre motel section. Parking for 20,000 cars will be provided in multilevel parking structures on the perimeter of the site as well as sub-surface areas below the plazas.

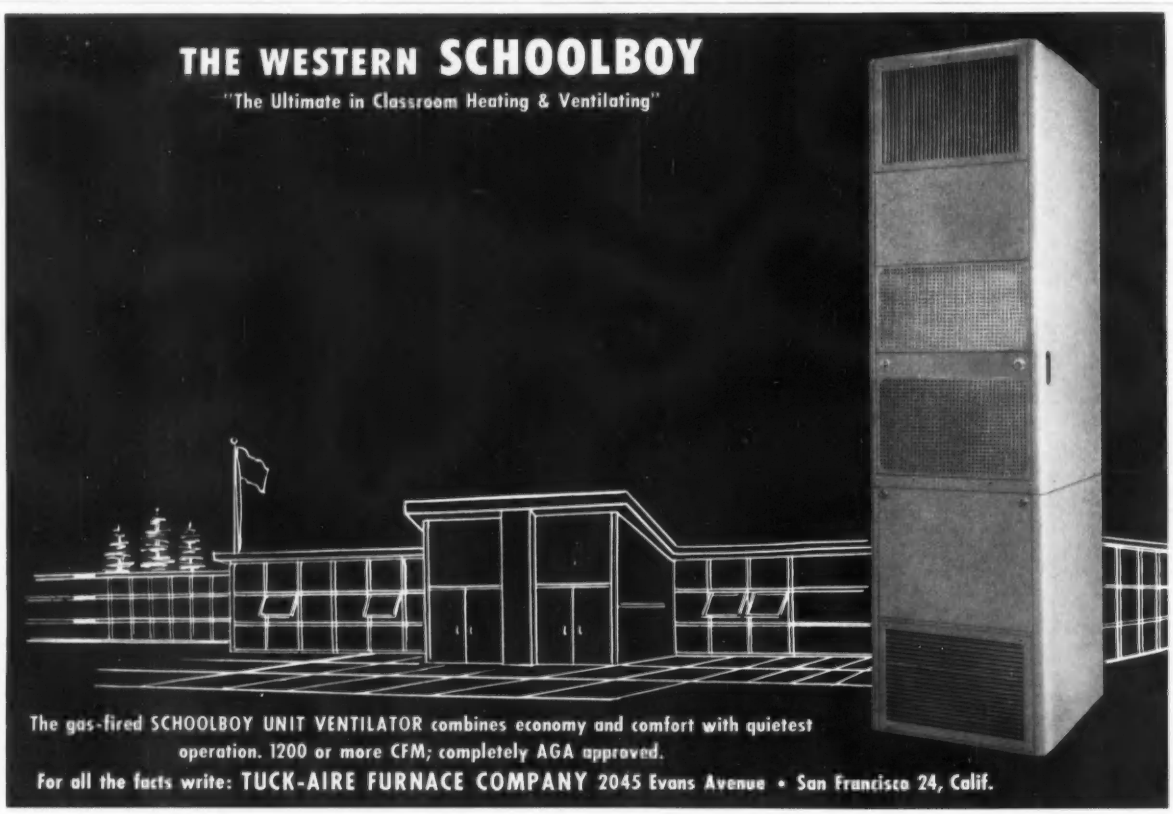
Supervising architects are Charles Luckman Associates; William L. Pereira is associate architect, and the Donald R. Warren Company is the consulting engineering firm.

An estimated $65 million will be spent for the land and for site preparation, of which $58,711,461 will be a government loan and grant. CRA expects to return $42,875,000 from sale of the land to private enterprise. The project is scheduled to begin early next year and completion is expected by 1967.

San Francisco Revives Greenbelt Hopes

The greenbelt of parks through San Francisco came one step closer to realization with the recent action of the city's Park and Recreation Commission which reversed an earlier decision in regard to the last remaining link in the belt. Prodded by the City Planning Commission, the recreation agency voted to ask the Board of Supervisors to buy 12.5 acres of undeveloped land on the slopes of Mount Sutro—if it is for sale.

Last fall the Commission turned down a chance to buy this same plot. Now the tract is under consideration by a group of investors who plan to develop it. If the developers refused to sell, and the Supervisors wanted it, the city could condemn the property.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Waste Space

Ernesto Rogers Talks

Tradition and treason both derive from the same Latin word (*traditio*—the giving over to another), Ernesto Rogers pointed out in his first lecture at the University of California as this year's occupant of the Chair of Italian Culture. And in his subsequent lectures he continued to develop this theme: that there can be treason in architecture and there can be tradition in it, too. Treason results when we ignore the lessons of our culture, when we forget the environment in which we place our buildings.

"Tradition," he says, "is the history we carry on with new forces; it is not the silent past. It is aliveness and the continuity of aliveness: if you understand this, then tradition is very important. The problem of fixing and developing tradition—which is a universal problem—is the problem of intermingling history and the natural environment. To consider environment is to consider history; and so to understand environment, architecture must probe the deepest layers of history.

"Our architecture is culturally up to date but it cannot fully interpret for us unless we bring into it the cultural experience of our history—the arts, the machine, politics, all that takes part in our activities.

"In the last century architects were directed to a spurious sense of the esthetic. And in the twentieth century we have principally studied problems dictated by reason. Now we must try to rebuild a synthesis of these two.

"Architecture is a function of beauty and reason interrelated. Beauty alone, in three dimensions, creates sculpture; utility (or reason) alone creates a machine. Only architecture can in itself be expressive of both. The field of our architecture today covers all the humanities and indeed all technology as well. Here is our greatest challenge."

Rogers' concern for tradition is no lone voice in a wilderness. In the Eastern part of the United States there is already manifest a trend—at least in discussion—toward carrying the international style into a new era, and part of this is the new approach to tradition which Rogers, independent of this American contingent, has been advocating.

Rogers speaks English fluently but his Italian accent belies his English name. The English grandfather who was responsible for this patronym died before Ernesto was born, so all his background has been Italian, not English. And his love for Italy is unbounded: for him it is "the most beautiful country in the world"; and Tuscany is "Italy's most beautiful region."

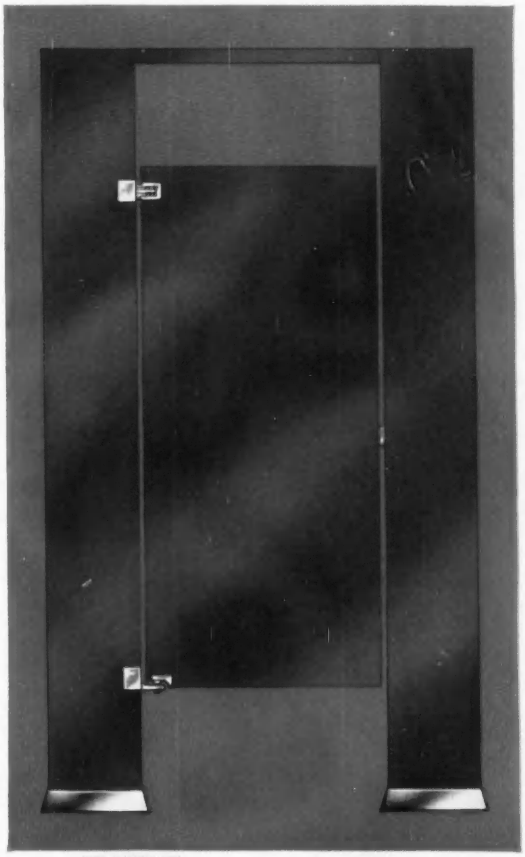
As the occupant of the Chair of Italian Culture, Rogers gave five public lectures on the Berkeley campus—a rare treat for Bay Area architects and students of architecture. He was also professor of architecture in the University's College of Architecture during his two months' residence on the campus.

Not For Copying

A delightful description of Frank Lloyd Wright as "a wizard with the power to effect the most miraculous synthesis" concluded one of Rogers' lectures: "He lives in Taliesin like a mystical sovereign, a place of harmony and peace so perfect that it can be imagined only in the life of Frank Lloyd Wright, not of an ordinary life. He is not for copying but for learning—or trying to learn."

E.K.T.

WHETHER THE JOB CALLS FOR ONE OR MANY...



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If you have the sun, you need no other fuel source with the Umbroiler, an umbrella-like solar cooking unit invented by Dr. George O. G. Lof of Denver, and marketed through Abercrombie and Fitch in New York. The cooker consists of a parabolic reflector, four feet in diameter, of aluminized plastic which focuses the sun on a 10-in. aluminum grill supported above the center of the reflector. In just a few minutes the device will cook meats laid on the grill. When not in use the cooker folds like an umbrella.

Modular-Mutable Furniture

A complete, coordinated collection of dining-room and bedroom furniture has been added to Brown-Saltman of California's "Variations" line, all of which has been designed by Martin Borenstein, A.I.A., I.D.I. The new pieces use a "pastel" walnut wood, somewhat lighter but complimentary to the earlier components of the line, but like the latter are designed on a 12-in. module. *Brown-Saltman of California, Los Angeles, Calif.*

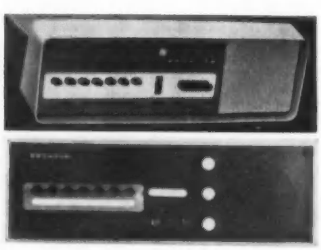
Hearth Form Unit

Available in all fireplace dimensions, a new hearth form unit consists of a heating chamber which can be mounted in a fireplace flush with or lower than the top of the hearth. Air warmed in the chamber is passed into a pair of ducts concealed in the masonry side of the fireplace and thence projected through louvered registers into the room. Said to be quite light-weight, easily installed and with very few parts, the unit does not interfere with external fireplace appearance. *Douglass Manufacturing Company, P.O. Box 905, Los Gatos, Calif.*

Free-standing Metal Fireplace

A wood-burning steel fireplace designed by Tucson, Ariz., architect William Wilde, can be installed as a free-standing unit and is intended for use in residential and small commercial buildings. It may be set on a masonry slab or a low table. Insulated with foil-faced glass fiber, it also provides a ventilated air space between fire chamber and outer jacket, with apertures into this space setting up hot air circulation. The unit is 34 in. wide, 19 in. deep, and 36 in. high and comes in three colors. Available accessories are screens, andirons, flues and vents. *Space-Planner Company, Room 211, Bank of Douglas, 15 East Alameda Street, Tucson, Arizona.*

All-Transistor Intercom



An all-transistor intercom—the Ektacom—has been announced by Fisher Berkeley Corporation for use in offices, industry, and homes.

Designed for desk use or for flush mounting on walls, desks or instrument panels, the new unit has simple lines to harmonize with contemporary interiors. Standard cabinets are heavy gauge steel with baked enamel finish or hand rubbed American walnut; instrument panels for these cabinets are, respectively, wood-grained Micarta or heavy gauge steel with mat black baked enamel finish. Any color or finish may be had on order.

Ektacom T, E, and W series come in 6-, 12- and 24-station master models, which may be variously combined. Accessories include remote speaker units, booster amplifiers for paging, telephone handset, light annunciators with tone signal, and an all-call switch.

Length of the various models runs from 15⅝ in. to 16¼ in.; height runs from 5¼ in. to 7⅜ in.; and depth from 8¼ in. to 8½ in. *Fisher Berkeley Corporation, 4224 Holden Street, Emeryville 8, Calif.*

Calendar of Western Events

- APRIL 5-29: Sculpture of Jose de Rivera, with documentary photographs. Long Beach Museum of Art, 2300 East Ocean Boulevard, Long Beach 3, Calif.
- APRIL 12: Closing date, "The Architectural Genius of Bernard Ralph Maybeck," California Palace of the Legion of Honor, Lincoln Park, San Francisco
- APRIL 18-26: "Northern Lights and Southern Shadows," California Spring Garden Show, Oakland Exposition Building, Oakland, Calif.
- APRIL 18-MAY 31: Goetz collection of French impressionist paintings, California Palace of the Legion of Honor, Lincoln Park, San Francisco
- APRIL 30: Seattle Art Museum Home Tour in Broadmoor and Washington Park, Seattle
- MAY 7: "Guide Posts to Good Taste," panel discussion with J. Marshall Marin, President, Colorado chapter, A.I.D. Presented by Friends of Denver Public Library, Auditorium, 1357 Broadway, Denver
- JUNE 10-SEPTEMBER 17: Oregon Centennial and International Trade Fair, Portland, Ore.

WESTERN SECTION

Index To Advertising

Manufacturers' Pre-Filed Catalogs of the firms listed below are available in the 1959 Sweet's Catalog Files as follows:

a Architectural File (green)
ic Industrial Construction File (blue)
lc Light Construction File (yellow)

	Airflow Company of California	64-5
	Allen Manufacturing Co., N. D.	64-12-13
	Beatty Scaffold, Inc.	64-17
	Cemex of Arizona, Inc.	64-8
	Dodge Books	64-16
	Fiat Metal Manufacturing Co.	64-18-19-25
	Forest Fiber Products Co.	64-20
	Kaiser Gypsum Co., Inc.	64-15
	Kraftile Company	64-24
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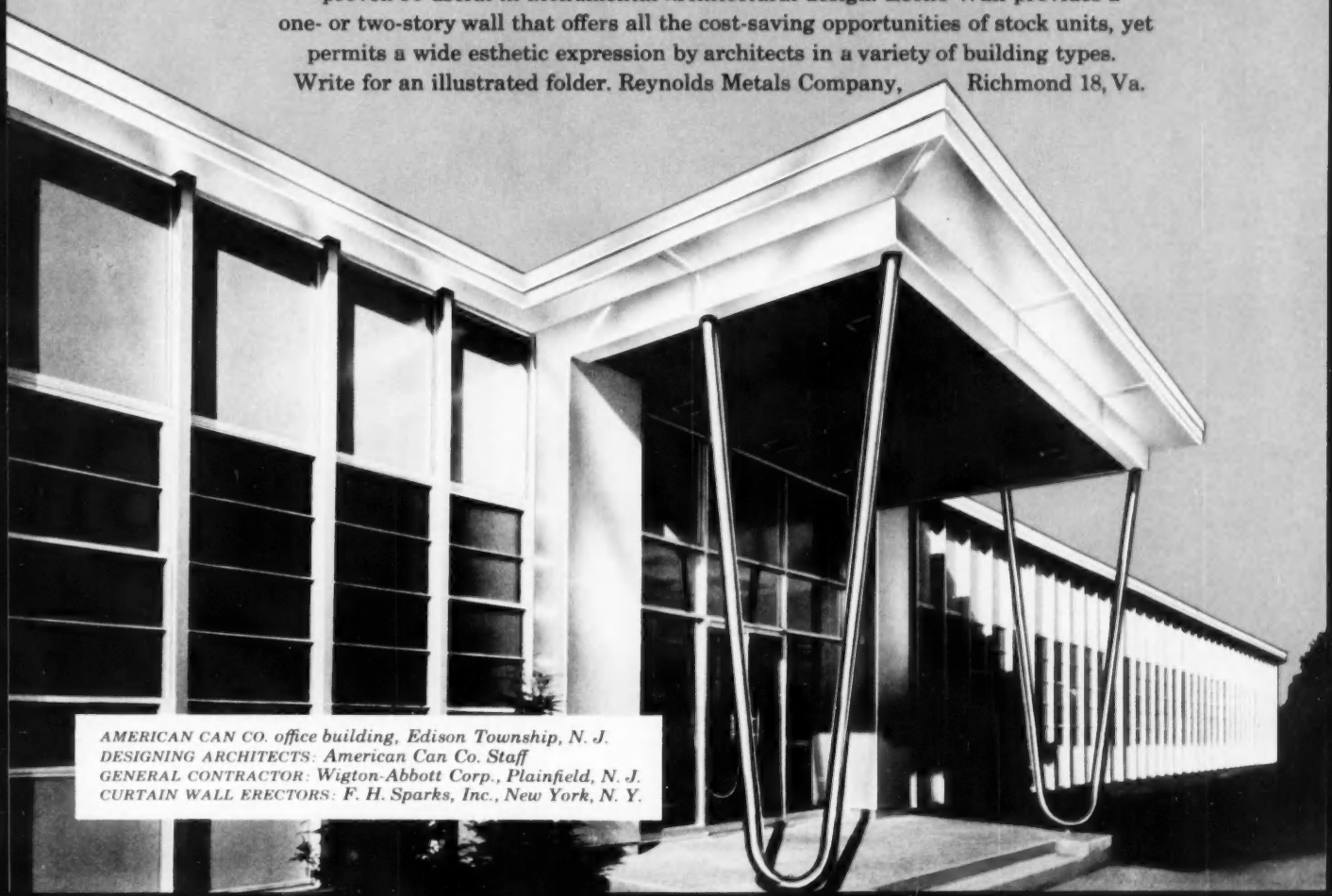
a	Soule Steel Company	64-21
	Tuck-Aire Furnace Company	64-22
	USS Columbia-Geneva Division	64-6-7

Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 355 Stockton St.

Reynolds opens ever wider
the impressive scope of

Aluminum In Modern Architecture

The New REYNOLDS ALUMINUM ECONO-WALL SYSTEM 101 is another example of Reynolds leadership. With this Econo-Wall, Reynolds engineering brings to the field of light construction the many structural and economic advantages of curtain wall systems which have proven so useful in monumental architectural design. Econo-Wall provides a one- or two-story wall that offers all the cost-saving opportunities of stock units, yet permits a wide esthetic expression by architects in a variety of building types. Write for an illustrated folder. Reynolds Metals Company, Richmond 18, Va.



AMERICAN CAN CO. office building, Edison Township, N. J.
DESIGNING ARCHITECTS: American Can Co. Staff
GENERAL CONTRACTOR: Wigton-Abbott Corp., Plainfield, N. J.
CURTAIN WALL ERECTORS: F. H. Sparks, Inc., New York, N. Y.

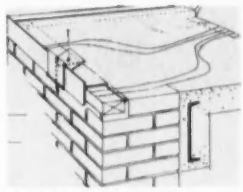
...impressive
FIRST NATIONAL CITY BANK BUILDING
New York, N. Y.
ARCHITECTS:
Carson & Lundin
GENERAL CONTRACTOR:
George A. Fuller Company
CURTAIN WALL:
Reynolds Metals Company

scope!

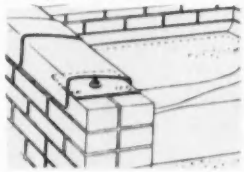
Port of New York Authority, Pier 2, Brooklyn, N. Y.
Architects: PONYA Staff. **General Contractor:** Rand Construction Co., New York, N. Y.
Roofing and Siding Erectors: A. Suna & Co., Inc., Long Island City, N. Y.

The First National City Bank's new headquarters building in New York—39 stories plus tower—will have its entire exterior of Reynolds Aluminum: mullions, windows and cast aluminum spandrels. The Port of New York Authority's Pier 2 in Brooklyn now displays its more than 300,000 square feet of Reynolds Aluminum Commercial Roofing and Siding and handsome it looks, with its baked-enamel blue finish on front and back facades.

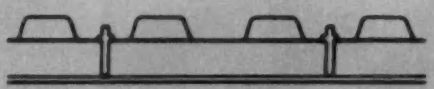
From tall skyscraper to long low pier—this is one way to emphasize the scope of Reynolds Aluminum in today's architecture. And there is further scope in the ever expanding variety of its uses. For illustrated brochures on each product shown, and for full information on any others, write to Reynolds Metals Company, Richmond 18, Virginia. Or consult your Sweet's Catalog.



Coping and Gravel Stop, so widely preferred in rust-free aluminum, are among Reynolds many warehoused architectural items.



Wide Variety of Commercial Roofing and Siding.

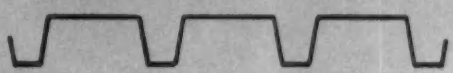


Commercial Field-Assembled Insulated Wall System. A wide variety of exterior wall treatments, offering both interior and exterior surface variations.

Corrugated Siding and Roofing. Mill finish or embossed. Baked enamel colors if desired. Variety of thicknesses and lengths.

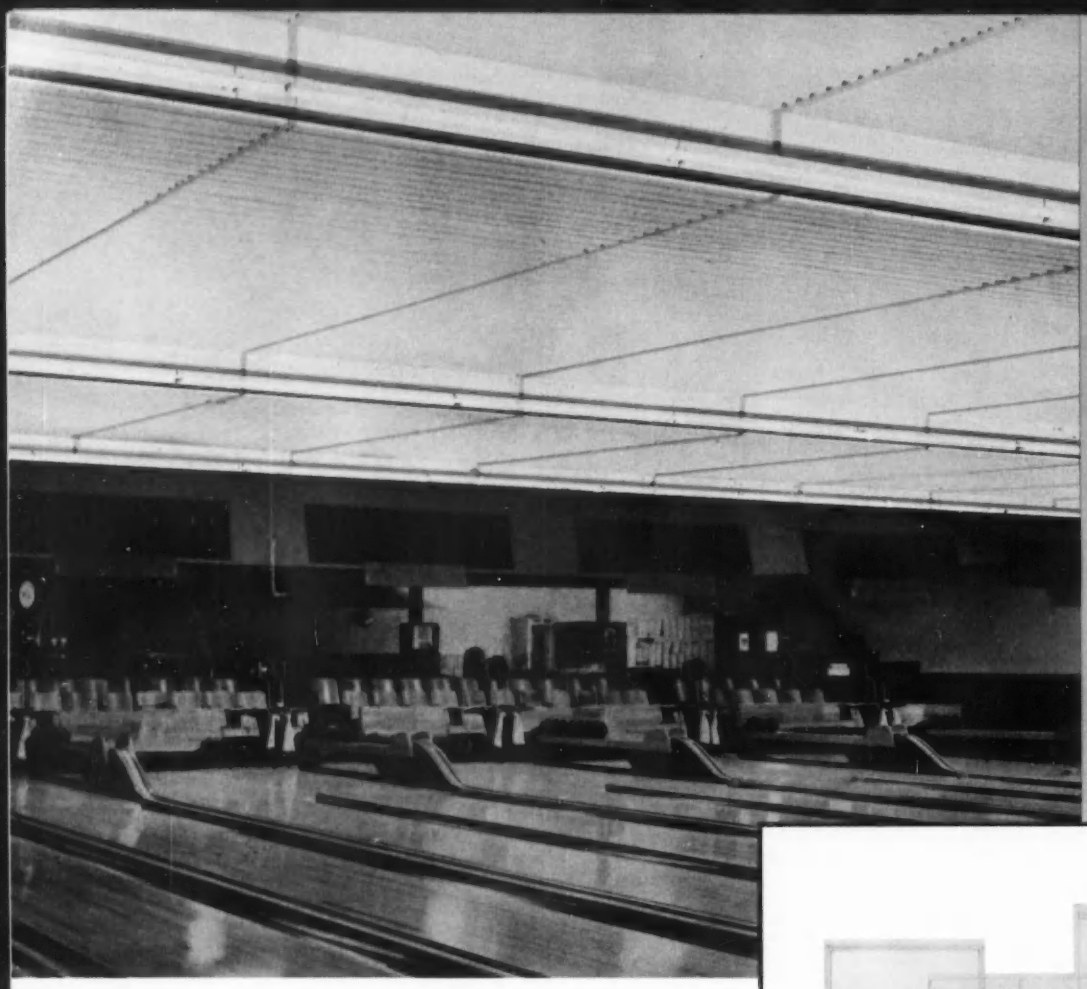
Ribbed Embossed Siding. Baked enamel colors if desired. 4" or 8" ribbing. Variety of thicknesses and lengths.

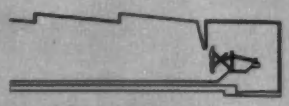
V-Beam Siding and Roofing. Mill finish or embossed. Variety of thicknesses and lengths.



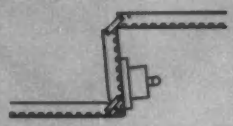
Roof deck. Economical, rust-proof. Unmatched by any similar product. Variety of thicknesses and lengths.

REYNOLDS ALUMINUM





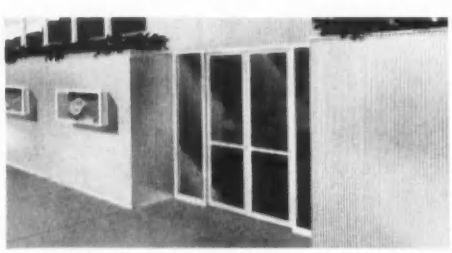
Longitudinal section showing arrangement of acoustical ceiling and lights.



Detail of lighting sawtooth. Light is one tube continuous fluorescent located as low as possible and still not be visible.

Reynolds Aluminum has created an entirely new concept in noise control for bowling lanes – a concept which combines important advantages in lighting, appearance and maintenance reduction together with essential sound conditioning. The system is based on Reynolds Acoustical panels in either natural aluminum or baked-on white enamel. Panels are light weight, easily removable for access to utilities. Installation is fast and easy, either in new construction or for remodeling. Illustrated folder on request.

For information on any architectural or construction use of aluminum, from skyscrapers to bowling alleys, from interior partitions to store fronts, write Reynolds Metals Company, Richmond 18, Virginia.



In Interior Partitions, too, REYNOLDS ALUMINUM means Flexibility of Design, Ease of Erection, Beauty, Economy.

The wide range of textures and of baked-on and anodized colors available in Reynolds Aluminum offers a new freedom in interior wall treatments. The ease of handling aluminum framing and joining members adds further versatility . . . and economy. Planning new construction with movable walls of Reynolds Aluminum guarantees satisfaction today . . . and assures complete flexibility for all future re-arrangements.

impressive scope of

REYNOLDS ALUMINUM

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which do you prefer?

Or, perhaps, we should ask, "Which do you provide for *guests* in your home?"

Your client's employees and customers are *guests*, too. And when they use the washroom facilities you design, they also look for cloth.

Why? The reason is very simple. There is no substitute for the luxury and quality of clean cotton toweling.

You, as an architect, can provide your clients with the best, by including cotton towel service in the washroom facilities you design.

How? By specifying modern recessed cloth units like the one pictured (center, right) . . . or by providing proper wall space for any of a variety of modern, wall-mounted continuous cloth towel cabinets . . . ALL available to your clients through local Linen Suppliers.

You do not obligate your client to any particular service. Why? Because this recessed unit will accept a wide variety of cabinets . . . both cloth and paper.

You specify the recessed unit . . . your client decides what type of service he wants. And, for continuous cotton towel service, there is no investment or installation charge to your client.

For complete information, write to Linen Supply Association on your letterhead. Send for this free Planning-for-Cloth Kit Illustrated, includes specifications for recessed unit and continuous cloth towel cabinets.

A. I. A. File No. 29-J

Linen Supply Association of America

and National Cotton Council • 22 West Monroe Street, Chicago, Ill.

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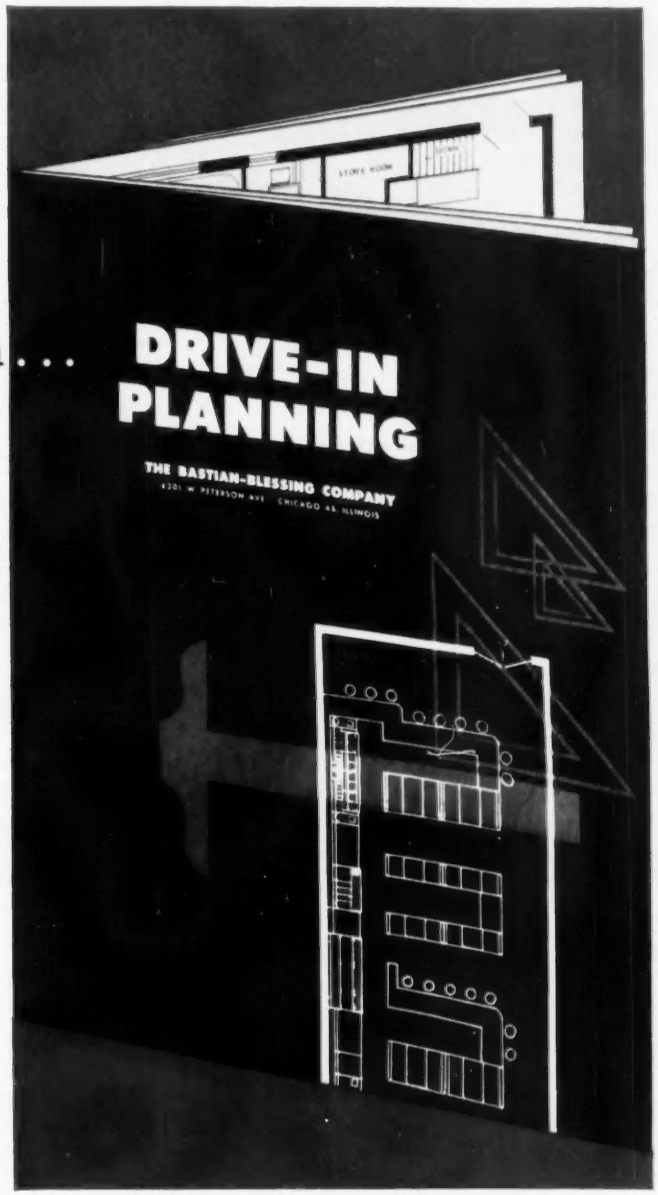

Layouts of 10 actual installations, showing:

- Overall Area
- Areas Devoted to Counter Restaurant, Kitchen & Storage, Office, Wash Rooms
- Seating Capacity
- Car Spaces
- Number of Employees
- Listing of Bastian-Blessing Equipment
- Cost of Bastian-Blessing Equipment
- Gross Annual Drive-In Income

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You'll find this new 16-page booklet packed with facts and precise information. It shows what equipment is used, and where—entrances, exits, traffic patterns . . . everything.

Bastian-Blessing assistance to architects is as complete as Bastian-Blessing equipment. We'll be glad to: (1) submit recommendations for any specific job; (2) develop equipment layouts for your use; (3) handle the entire job through installation and final inspection.

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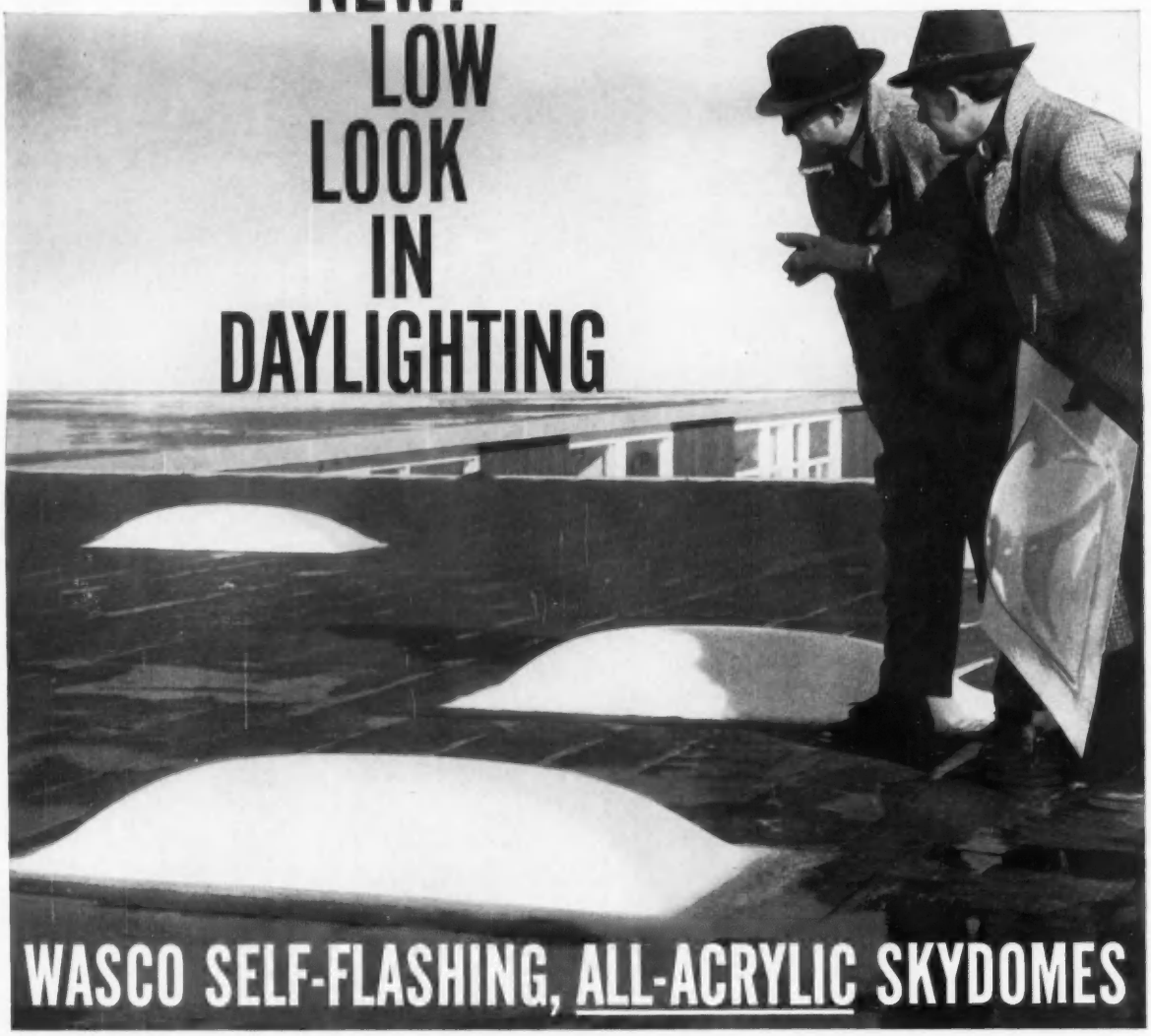

WASCO SELF-FLASHING, ALL-ACRYLIC SKYDOMES

New! Low silhouette

Wasco Self-Flashing Skydomes are shown installed on the partially completed roof of Natick, Mass. Jr. High School — designed by Boston architects Smith and Sellew. See how these units hug the roof, allow you to keep horizontal lines clean.

New! All-acrylic double dome

Acrylic lasts longer, weathers better, and is self-cleaning. Wasco Self-Flashing Skydomes are made by chemically welding the *acrylic* dome to a fiber-glass reinforced *acrylic* sheet.

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Wasco Self-Flashing Skydomes eliminate curbs. Reinforced flange can be nailed directly to roof. Then, roofing goes over flange, right up to the dome . . . positively sealing out wind and water.

Send for details, or see Sweet's Architectural File 20a/Wa.

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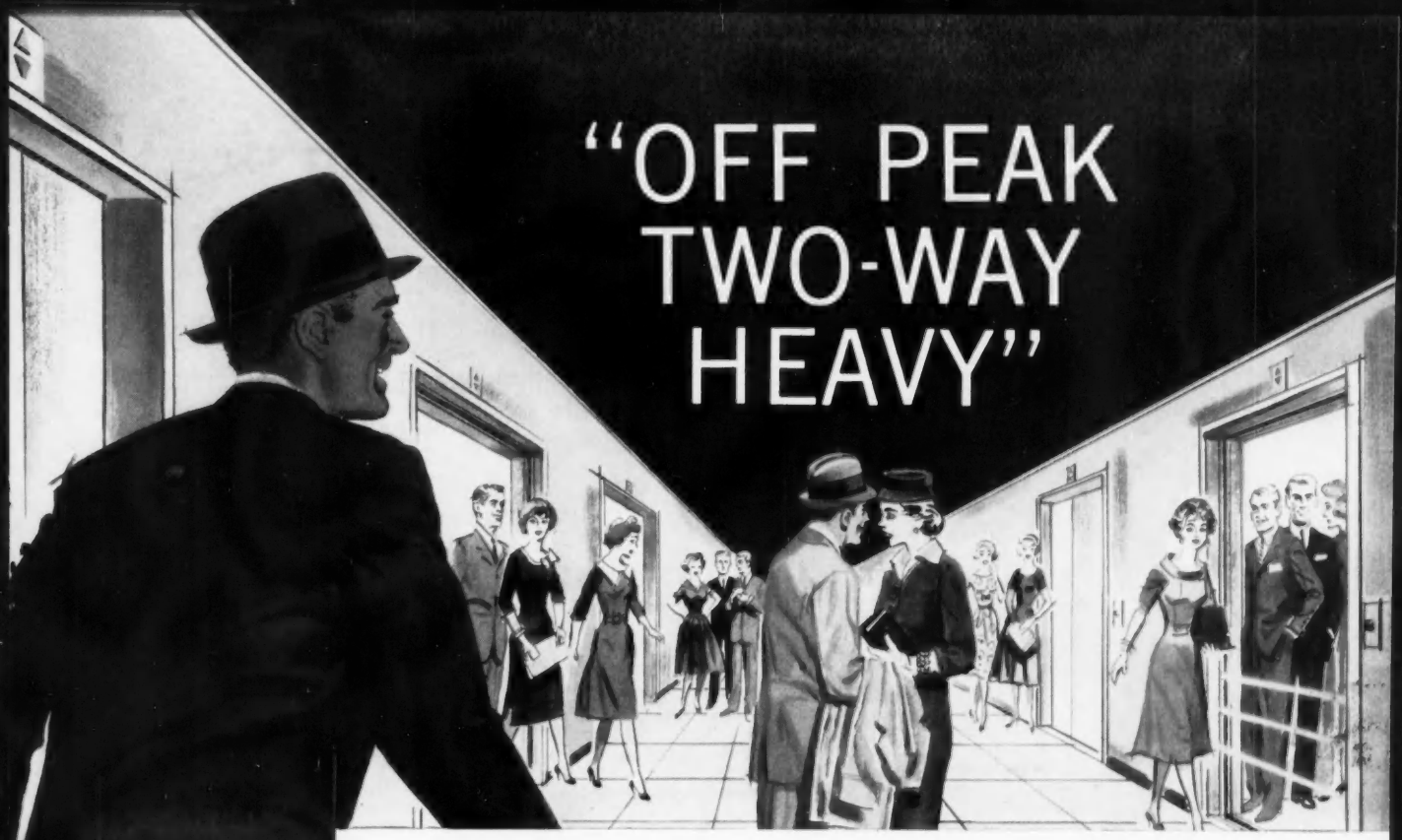

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"Off peak two-way heavy" is one of *seven major traffic problems* that can tie a building in knots! It occurs at coffee break time—and between lunch-hour *up* and *down* peaks.

The Haughton 7-program system with Auto-Signamatic (operatorless) Control keeps a busy office building's elevators paced to traffic requirements at *all* times—solves those seven major traffic problems!

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Offer the same excellent service in installations of four cars or less!

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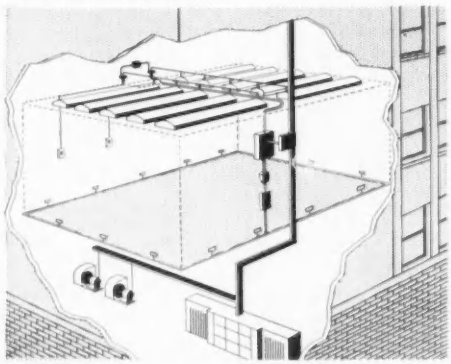
FOR MORE INFORMATION on General Electric 480Y/277-volt power distribution equipment, contact your nearest G-E Apparatus Sales Office or write for Bulletin GEA-6851. General Electric Co., Section 680-16, Schenectady 5, N. Y.

* Identical to 265/460Y.



CUTAWAY shows basic loads—lighting, motors, general service—supplied by G-E 480Y/277-v equipment with fewer feeders, components than 208-volt system. Result: savings in space, equipment costs.

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*63 Wheeler-Fullerton aluminum, deep-bowl, Hi-Bay, 18" reflectors with wire guards. Alzac finish protects reflecting surfaces, resists corrosive atmospheres, repels moisture attack. Ventilating slots for cooling; steel necks for additional strength. Uses 1000 watt incandescent lamps.

50 Wheeler-Fullerton aluminum, deep bowl, Hi-Bay, 14" reflectors with Alzac finish, light the bleachers with 300 watt incandescent lamps.

Intensity of light over ice is 50 foot candles and over goals, 70 foot candles.

Boston College Rink, McHugh Forum, Highlights Custom Designed Efficiency

In college hockey there's no substitute for top flight performance on the rink, or overhead. The right intensity of light on the right spot, for players and spectators alike, depends on the most careful lighting design and skill of installation. That's why for Boston College, Wheeler-Fullerton easy-maintenance fixtures are the first choice.

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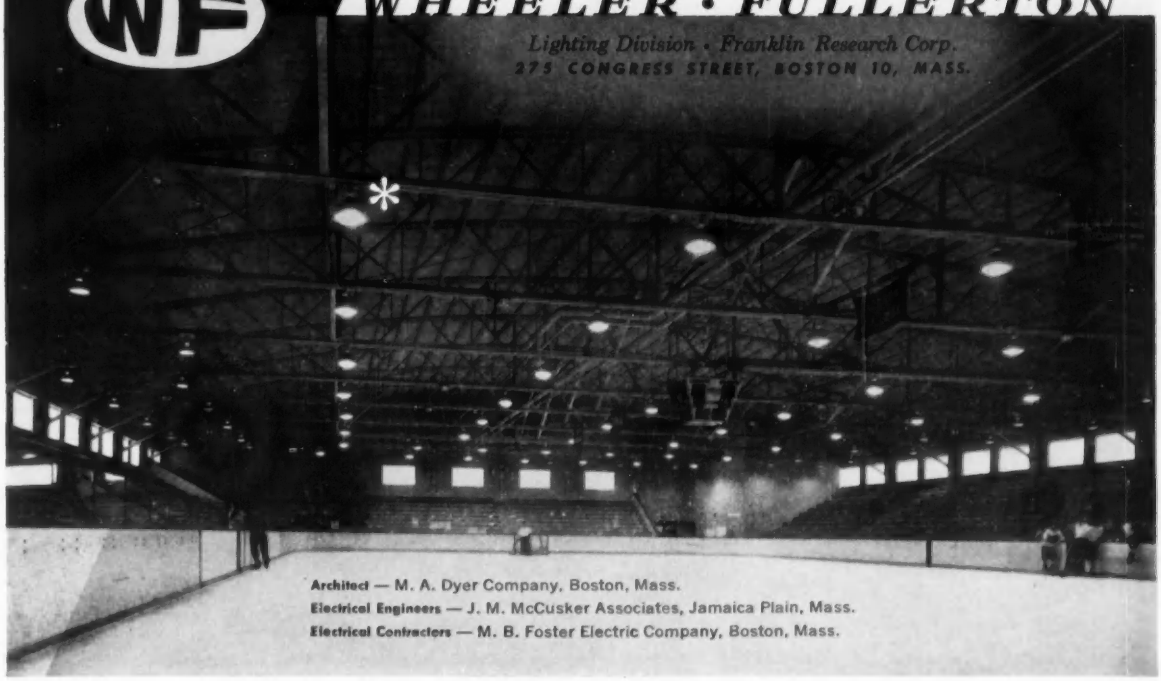
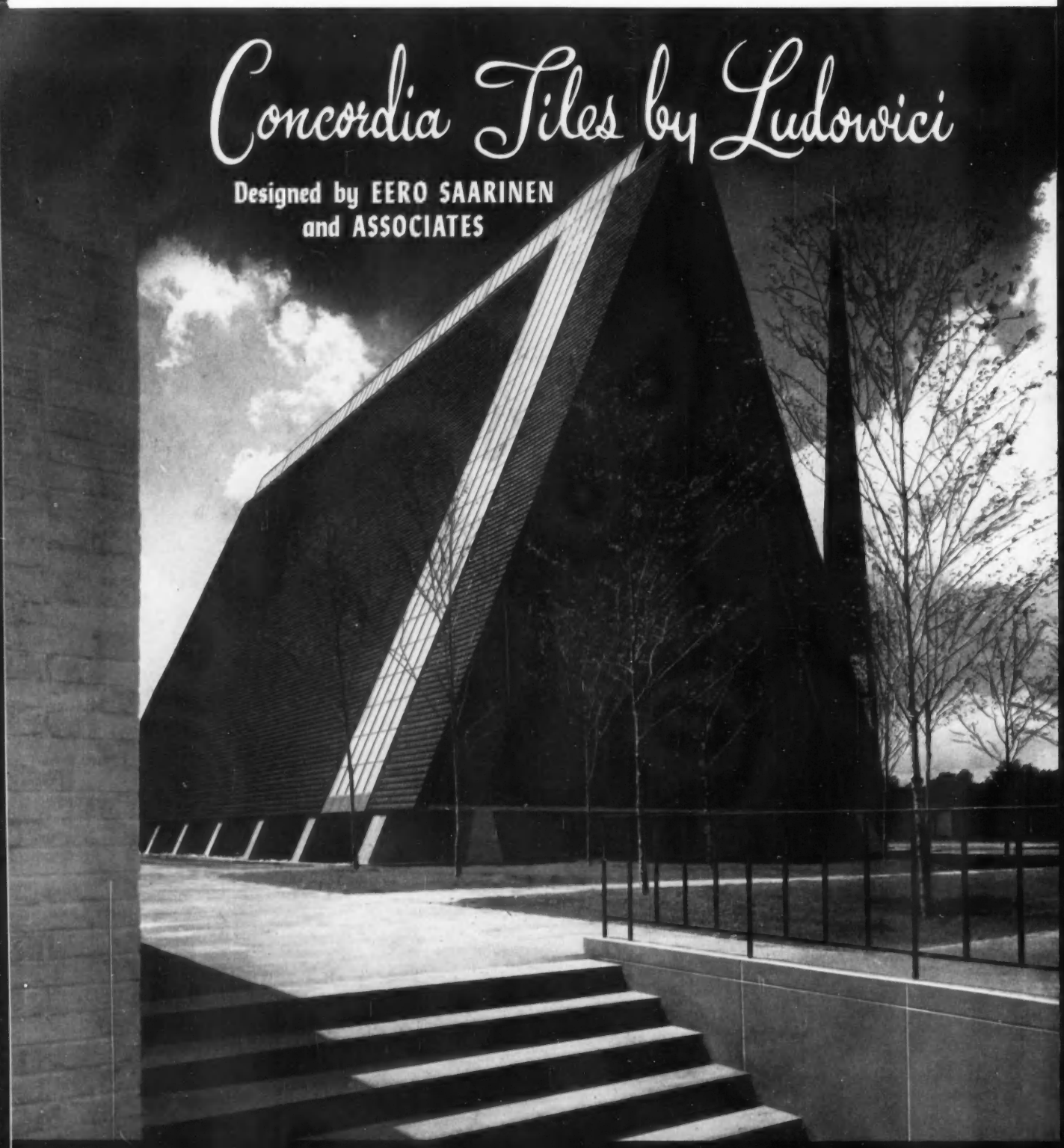


Architect — M. A. Dyer Company, Boston, Mass.
Electrical Engineers — J. M. McCusker Associates, Jamaica Plain, Mass.
Electrical Contractors — M. B. Foster Electric Company, Boston, Mass.



Ludowici-Celadon Company was selected to produce the ceramic roofing tiles, designed by Eero Saarinen & Associates, which were so important in the full development of the architectural character of Concordia Senior College.

For over 65 years we have been assisting architects and engineers in producing roofing tiles for their specially designed work.

In addition, we offer standard patterns in a wide range of colors of roofing tile in both the Interlocking and Flat Shingle types for contemporary and traditional designs.

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now you can specify maximum showering satisfaction *plus* water-saving economy!

BIGGEST NEWS in showering today is the Speakman Anystream with new Autoflo Water Saver. Here, at last, is the ultimate in showering pleasure combined with practical, proven water saving!

New modern styling—distinctive, smart silhouette blends with any decor!

AUTOFLO—concealed, quiet flow control automatically saves water, saves fuel. Reduces water heating costs, sewage loads.

Speakman Anystream S-2240 Models 1 and 2 control maximum flow to 4½ gpm. at any pressure. For critical water areas requiring limit of 2½ gpm., specify S-2240 Model 3.

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Self-cleaning plungers are clog-proof, non-dripping! Look for Speakman® identification disk.

SPEAKMAN anystream® showerhead now available with new autoflo concealed water saver

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S-2245 SPEAKMAN WALL-TYPE Anystream Showerhead with 4½ gpm. Autoflo, Self-cleaning and Vandal-proof, fits tight against wall.

Get the complete story on Anystream with concealed Autoflo Water Saver. Write today for new folder or ask for a demonstration by a Speakman representative.

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SPEAKMAN COMPANY
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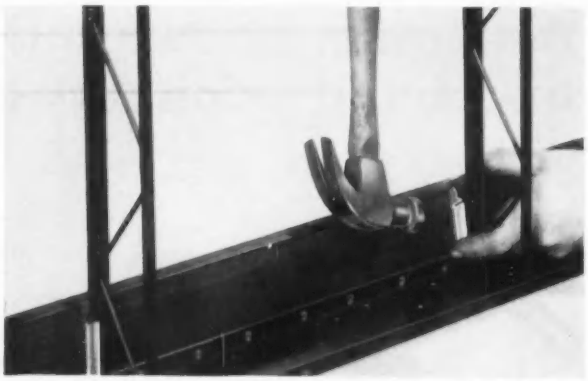
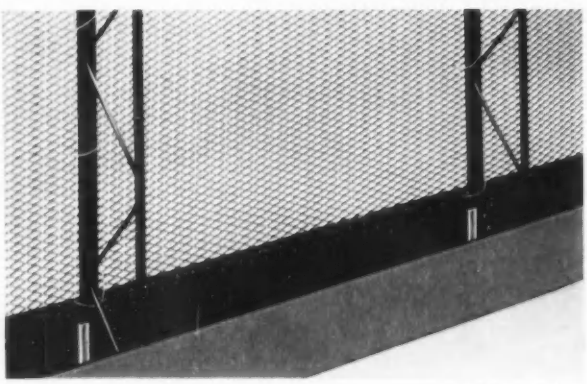


Clip springs onto stud

Grouting before lathing



Lath rests on clip

NEW HOLOSTUD CLIP

makes metal base

a postive ground for plaster

Gold Bond's new Holostud Metal Base Clip instantly attaches the metal base direct to the stud—always at the proper distance for plastering. Plasterers can use the base as an accurate ground, assuring a smooth, even wall.

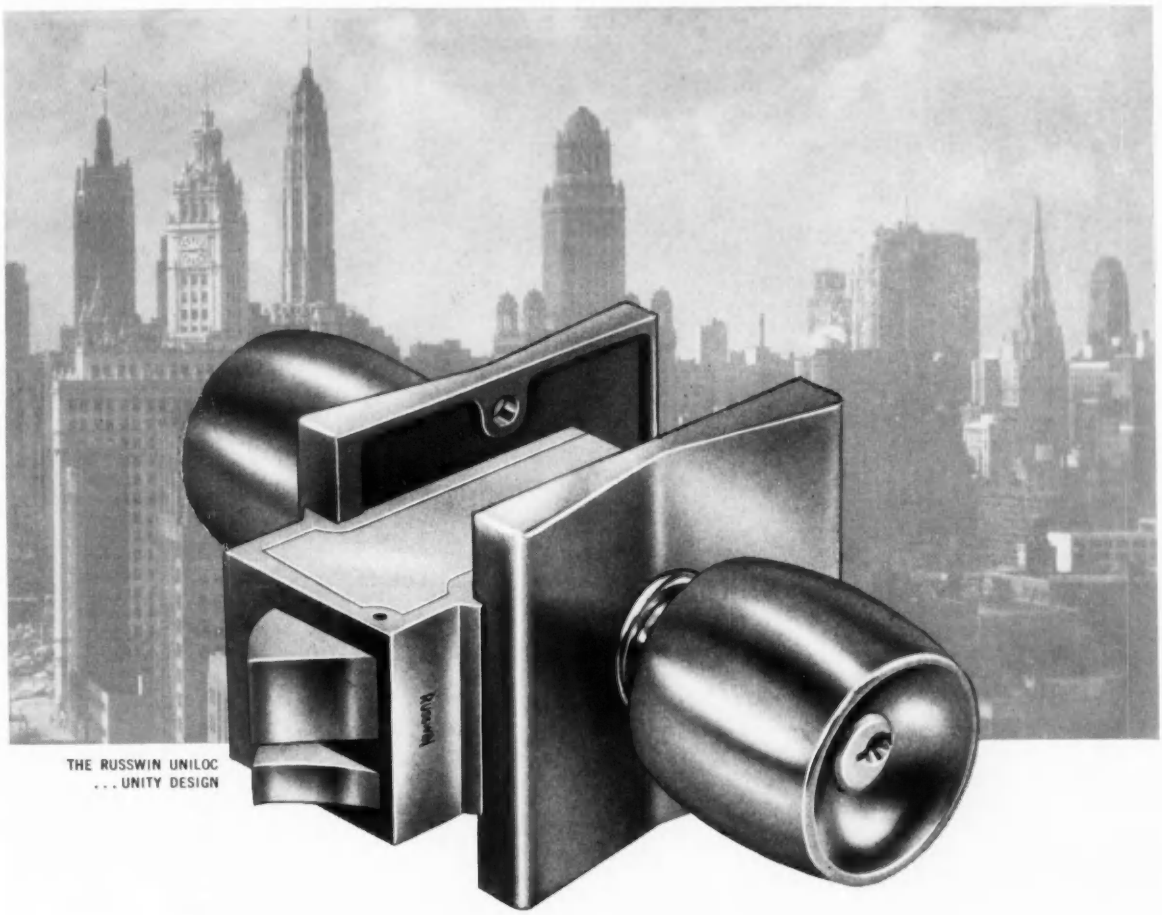
This new clip eliminates the need for shoes and starter clips... holds the Holostud firmly, and supports the bottom edge of the lath. Grouting is easier, too, because the metal base can be attached to the Holostud and grouted *before* the lath is applied.

Find out how this new addition to the Gold Bond® Holostud line can simplify work on your next building. Write for technical literature to Dept. AR-49,

NATIONAL GYPSUM COMPANY, BUFFALO 13, NEW YORK

Gold Bond
BUILDING PRODUCTS

a step ahead of tomorrow



THE RUSSWIN UNILOC
. . . UNITY DESIGN

You get beauty . . . and brawn . . . in ready-to-mount Unilocs!

Massive good looks! Rugged unit construction! You get both — plus the economies of no-mortise mounting with the Russwin Uniloc.

This handsome heavy-duty one-piece lock is slipped into place without any disassembly or reassembly — and lasts a lifetime. All you need is a notch in the door. No mortising. Parts remain undisturbed. The heavy, extruded frame keeps them in factory-perfect alignment — permanently.

You can get the Uniloc in all functions, and in various designs and finishes. Also, with rich, rare-wood knobs for interiors. Have your Russwin representative show you this masterpiece of lock-making. Or write direct for literature to Russell & Erwin Division, The American Hardware Corp., New Britain, Conn.

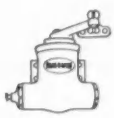
New UNILOC Strike features Nylon screw adjustment to assure snug latch bolt fit.

"400" Closers

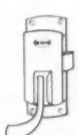
Overhead Door Holders

Stilemaker Locksets

"Ten Strike" Cylinder Locks

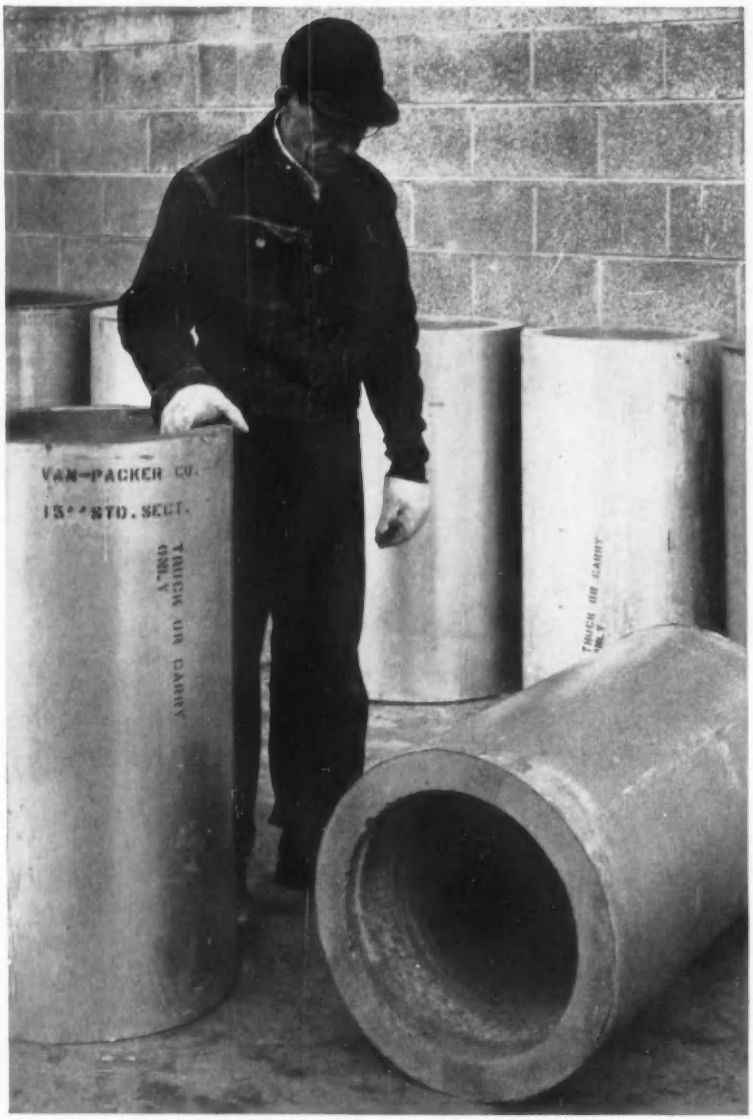


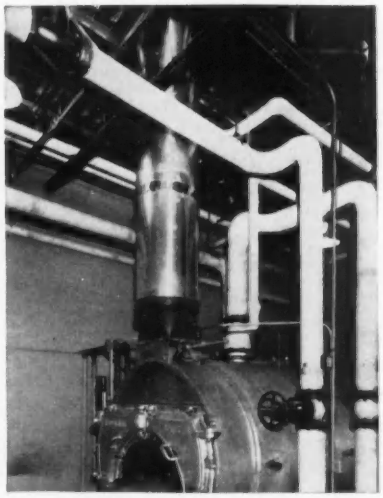
Surface Door Closers



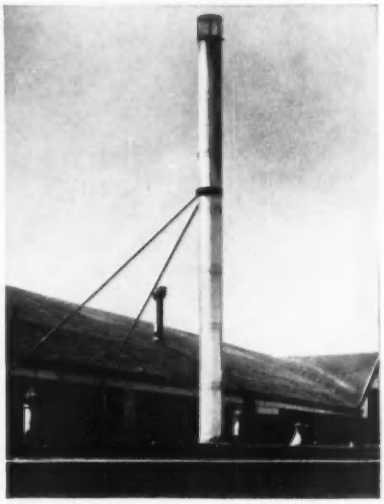
Fire Exit Bolts

RUSSWIN
DOORWARE





Van-Packer Stack can be superimposed on boiler or floor supported on Tee Section.



With Hi-Temp Sections, stack handles incinerator flue temperatures to 2000°F.

Van-Packer's refractory construction means longer stack life at much less cost

Low original cost (about the same as a comparable steel stack) plus substantially longer life makes the Van-Packer Stack by far the most economical for industrial boilers and incinerators.

The stack is prefabricated of a special refractory material cast in 3-foot sections, and is available in eight diameters from 10-inch ID to 36-inch ID. Sections are simply cemented one atop another with special high temperature acidproof cement.

Boilers and furnaces take a Van-Packer with Standard Sections; Hi-Temp Sections are used for incinerators. Because it is non-corrosive, inside and out, a Van-Packer will outlast a steel stack by three times on the average, yet costs no more than a comparable steel stack. Corrosion-resistant metal jacket needs no painting or maintenance.

Van-Packer Stacks are available through local Van-Packer Jobbers and Special Representatives. See "Smoke Stacks" or "Chimneys — Prefabricated" in yellow pages of your classified directory.

Write for Bulletin IS-32-54

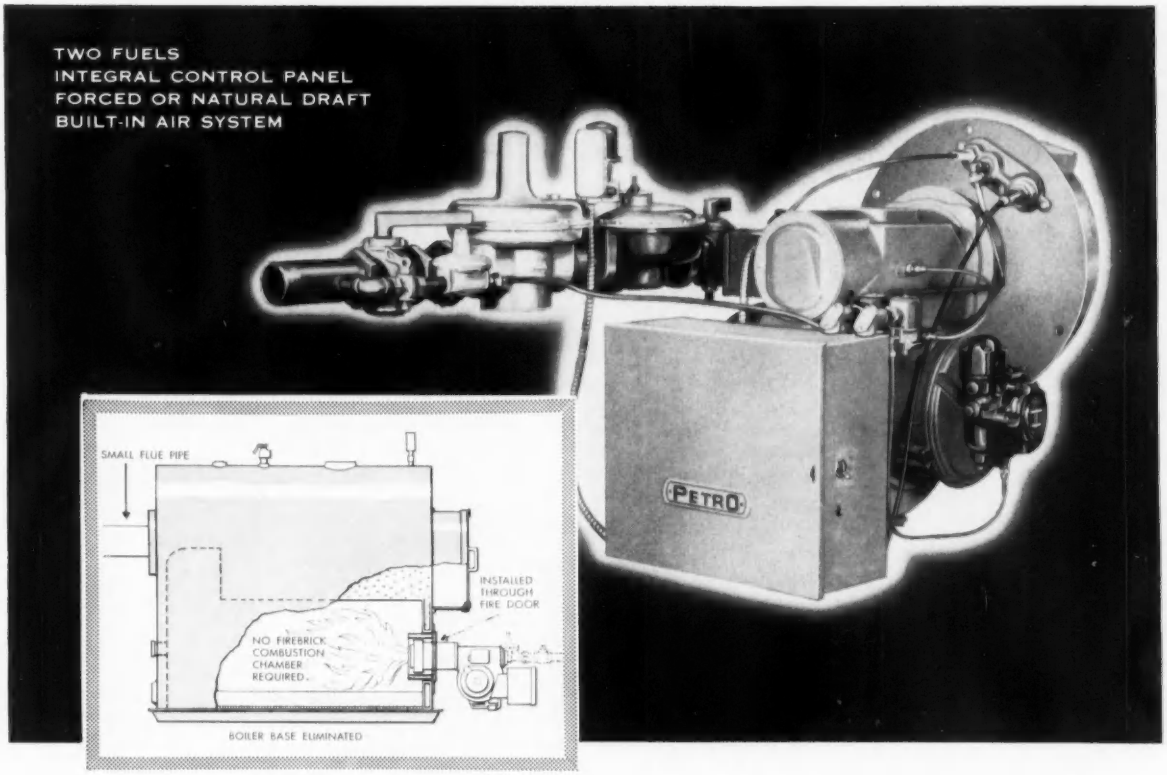
VAN-PACKER

Division of FLINTKOTE *America's Broadest Line of Building Products*

Van-Packer Co. 1232 McKinley Ave., Chicago Heights, Ill. • SKyline 4-4772

SEE OUR CATALOG IN SWEET'S

New all-in-one burner *bolts to boiler front*



Average installation saving in firebox boilers: $250

Substantial savings in installation costs are made possible in a firebox boiler by the elimination of the boiler base and fire brick combustion chamber. Fits any boiler; bolts to the boiler front. Complete forced draft, fuel and control systems are built into the burner. No secondary air construction needed.

Also available as boiler-burner unit

Packaged boiler with integral burner can be delivered at site, ready for service connections. No brickwork, pit, or special setting required.

No high stack needed

In a sealed fire box no stack is required; merely a vent. Air is supplied under forced draft. In conventional boilers the stack can be shorter and smaller than required by the usual gas or oil burner.

Switches fuels instantly

Burns either fuel with high efficiency. Saves purchase of extra burner in areas where gas users must provide standby oil equipment. One-fuel models are also available for either gas or oil.

Cuts fuel costs

New type of burner head and improved fuel-air control develops exceptional combustion efficiency. Instant heat absorption. No wasteful refractories to heat up.

Costs less to operate

Requires no more supervision than a domestic burner. Maintenance problems are negligible, and can usually be handled by the janitor.

Capacities: oil, 4 to 30 gph; gas, 500,000 to 4,000,000 btu/h.

Send coupon for full description and specifications

Makers of Quality Heating and Power Equipment since 1903

PETRO

T. M. REG. U. S. PAT. OFF

PETRO, 3313 W. 106th Street, Cleveland 11, Ohio
(In Canada: 80 Ward Street, Toronto, Ontario)

Please send complete information on Petro P-240 dual-fuel burner and boiler-burner units.

Name_____

Company_____

Address_____

City_____ State_____

Announcing...

a great new creative concept*
in grille application
and design

Pictured
NEW SLIM LINE GRILLE
Primarily for ceilings. 2 models available any length: C-2700 . . . 1-way deflection, 2⅞", 4⅞", 5⅞", 7⅞" widths. C-2800 . . . 2-way deflection, 3⅛", 6⅛", 9⅛", 12⅛" widths.

EXTRUDED ALUMINUM

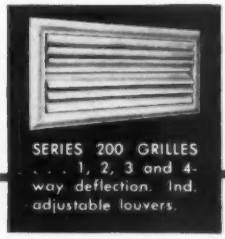
*
UNLIMITED FREEDOM OF EXPRESSION . . .
bounded only by the creativeness of the designer's mind . . .

Titus combines the properties of fabulous aluminum with excellence in grille engineering to open a wonderful new world of design opportunities. In shapes, textures, hues, shades — there is no limit with aluminum. Now architects, design engineers can put their own individuality of style into a grille — provide the new and different in mood and motif — in a manner never before attained.

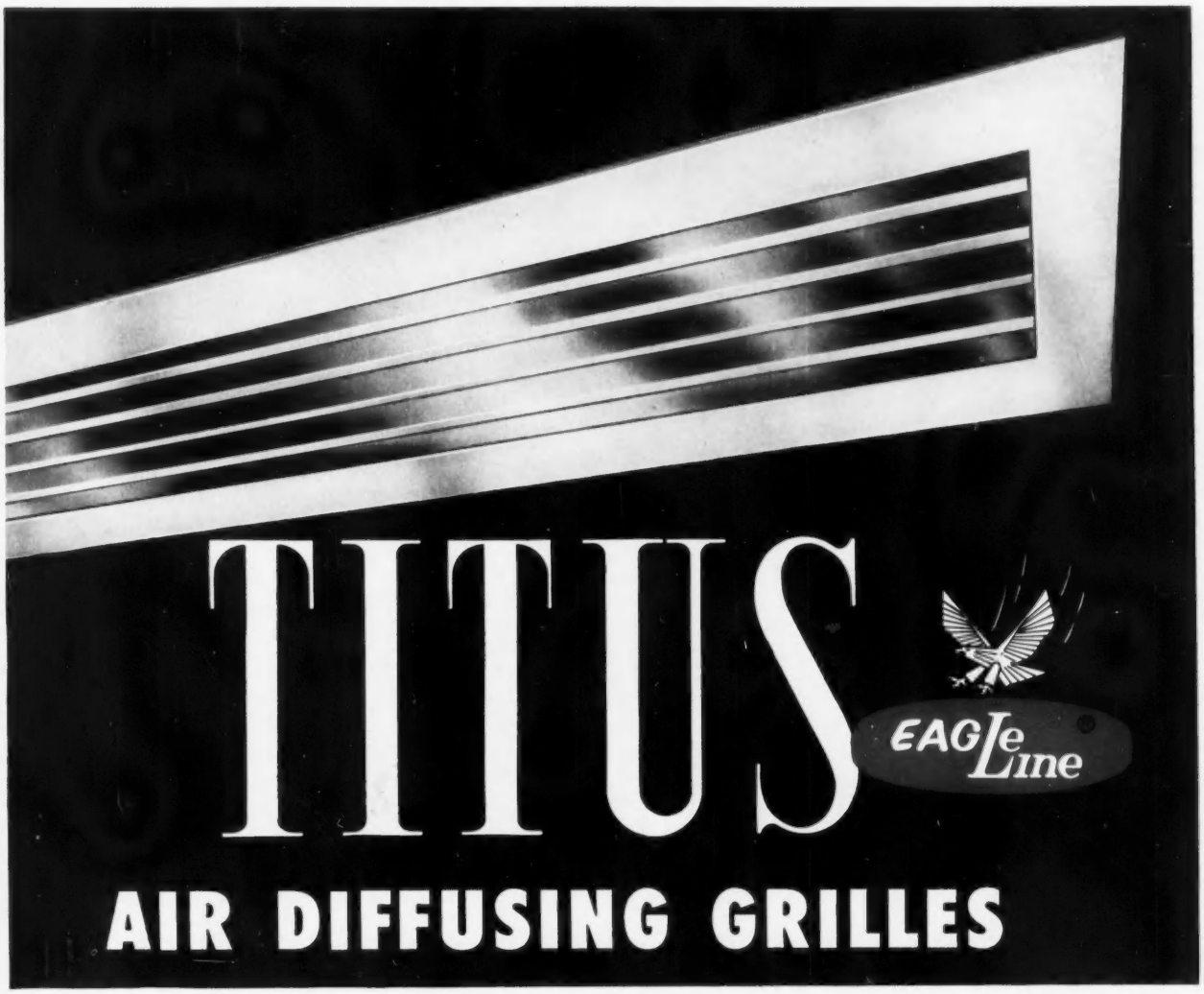
LINEAR-TYPE GRILLES . . . any width or length. 0° or 15° deflection.

SUPPLY AIR GRILLES & REGISTERS . . . individually adjustable Airfoil louvers.

RETURN AIR GRILLES & REGISTERS . . . louvers fixed at 45° deflection.



SERIES 200 GRILLES . . . 1, 2, 3 and 4-way deflection. Ind. adjustable louvers.



TITUS

EAGLE Line

AIR DIFFUSING GRILLES

TODAY'S FIRST COMPLETE LINE OF QUALITY EXTRUDED ALUMINUM GRILLES AND REGISTERS

Designed, engineered and manufactured by Titus — made of finest quality aluminum extrusions from *Titus' own extrusion presses.* Light, strong — resist corrosion and offer permanent natural beauty. All types — all sizes — for ceilings, sidewalls, window sills and floors. Choice of many border and louver designs.

Titus also custom makes extruded aluminum grilles to fit *any design, finish, or color.* WRITE FOR FURTHER INFORMATION.

OUTSIDE LOUVERS & PENTHOUSES . . . 1½", 2" and 4" louvers.

TITUS MFG. CORP., WATERLOO, IOWA

Free "Portfolio of Titus Extruded Aluminum Grilles and Registers". Fill out coupon, clip to your company letterhead and mail today.

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COMPANY _____

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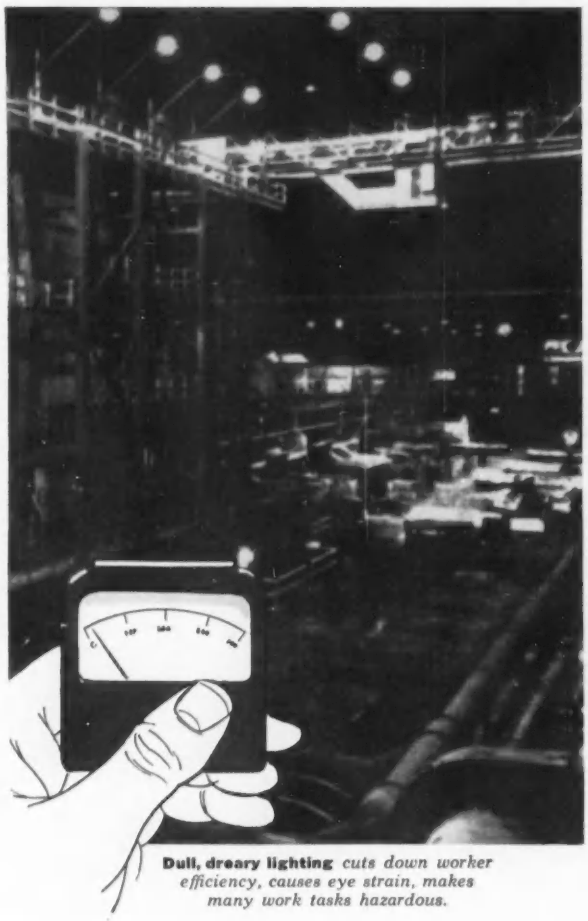
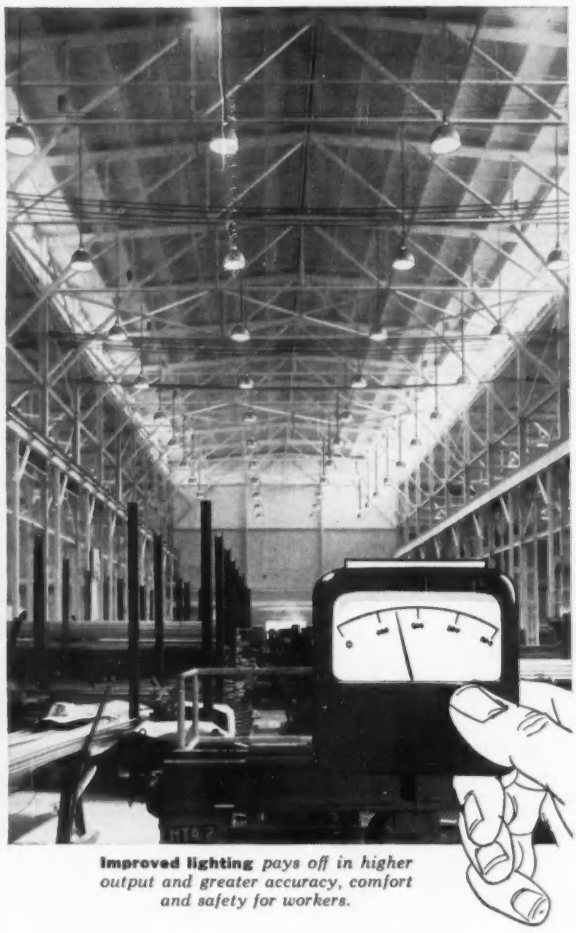


Dull, dreary lighting *cuts down worker efficiency, causes eye strain, makes many work tasks hazardous.*



Improved lighting *pays off in higher output and greater accuracy, comfort and safety for workers.*

Lifting the lighting level

In the picture on the right, those Abolite fixtures provide a high level of comfortable, glareless light throughout this high bay building. 18% of the light is directed upward through Abolite's open top, washes out the deep shadows, gives lamps a soft background. 35° shielding of lamp practically eliminates glare.

Open-top design also gives Abolite high bay units a self-cleaning action. Air circulates through the fixture, sweeps reflecting surface clean.

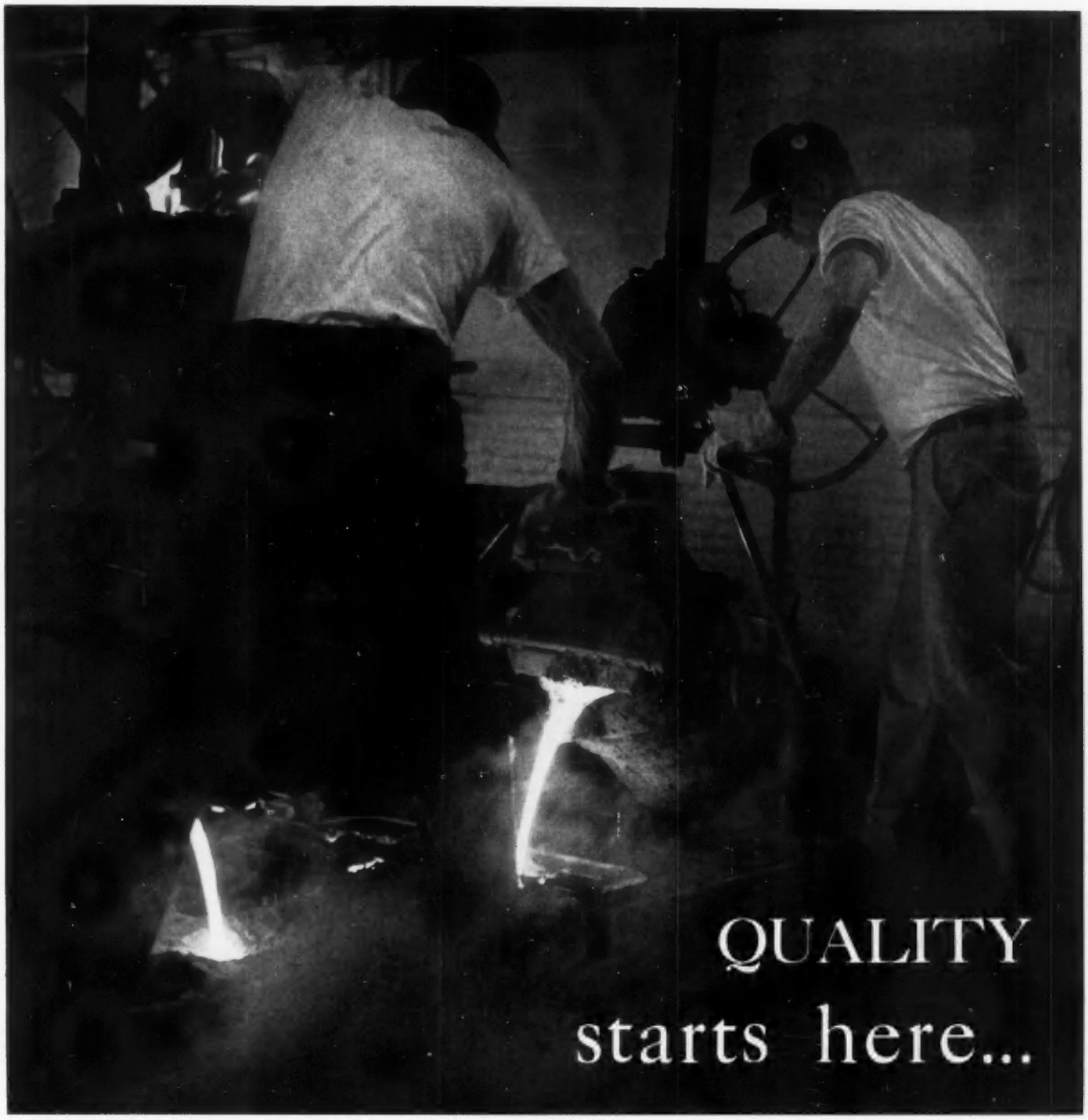
Choose from several Abolite uplight units for high bay lighting: 18" and 24" Alzak aluminum fixtures for 400 and 1000 watt mercury lamps; and 14" and 18" fixtures for 300-500 watt incandescent lamps (ideal for gymnasium lighting). For full information, write *Abolite Lighting Division, The Jones Metal Products Company, West Lafayette, Ohio.*

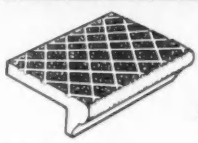
Abolite Cat. No. HMFAU-2400 Alzak aluminum uplight fixtures with 400 watt white reflector Mercury lamps.

ABOLITE *Lighting*

THE JONES METAL PRODUCTS COMPANY

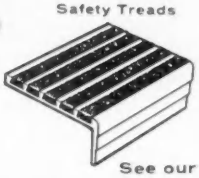
West Lafayette, Ohio





Abrasive Cast
Safety Treads

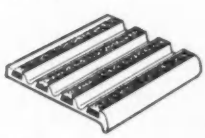
Super-Grit
Safety Treads



Pouring the molten metal for Wooster abrasive cast safety treads and thresholds is just one step in a manufacturing operation that is called upon to constantly meet a number of varying conditions.

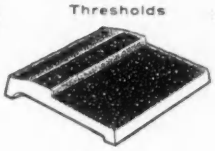
The constant care necessary to insure quality materials depends upon craftsmen like the molders above - just one part of our team working to maintain this quality tradition.

See our new enlarged catalog in Sweets architectural file $\frac{13b}{Wo}$ or send for free copy



Safe-Groove
Safety Treads

Abrasive Cast
Thresholds

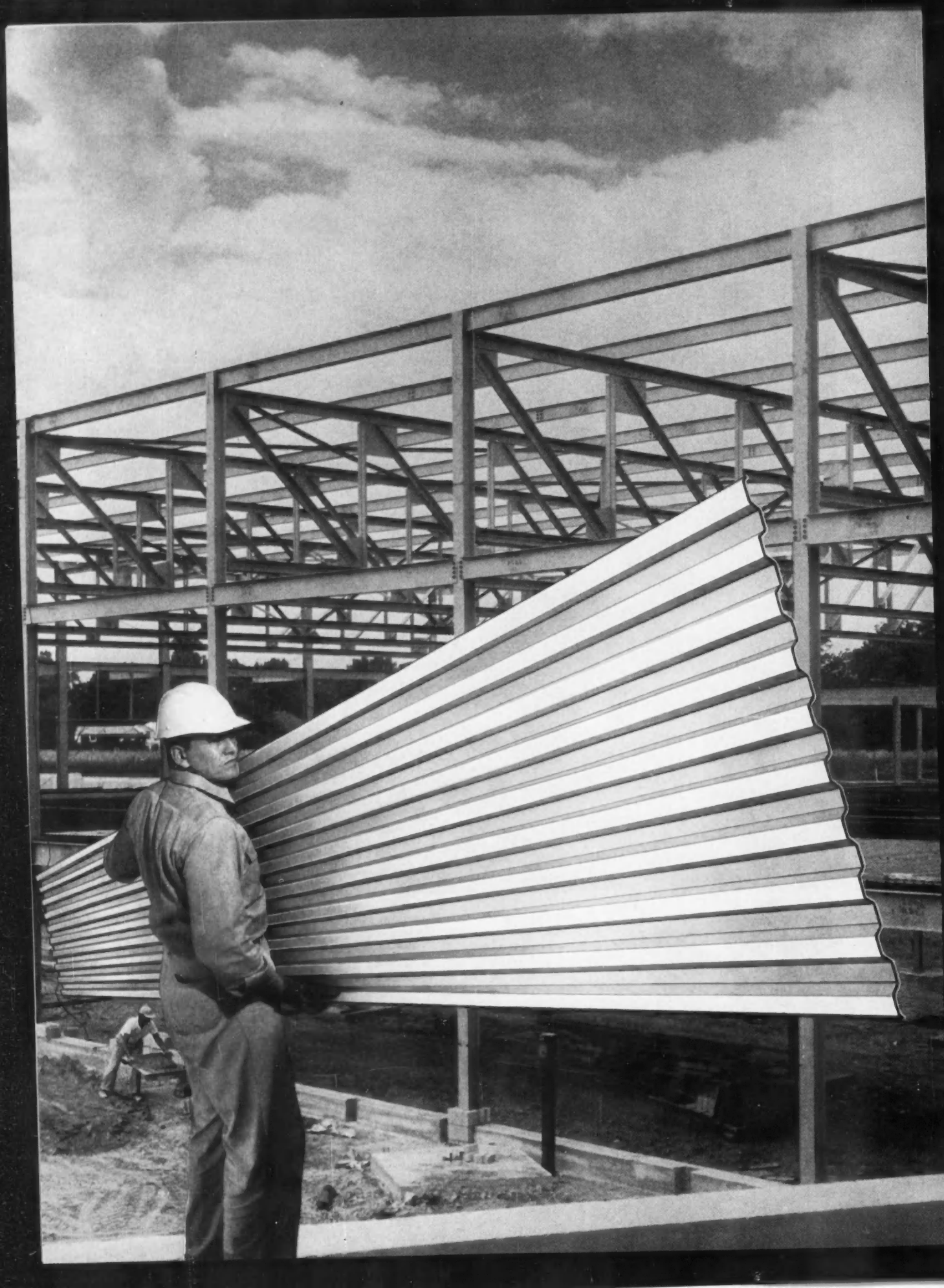


WOOSTER

QUALITY SAFETY TREADS AND THRESHOLDS

WOOSTER PRODUCTS INCORPORATED • WOOSTER, OHIO

Representatives in all principal cities



Faster construction
of concrete floor and roof slabs
over spans up to 5′4″

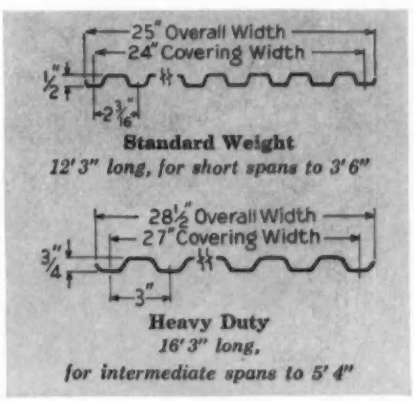
Concrete slabs cost less with Milcor Ribform

This new permanent steel form for concrete floor and roof slabs *saves on time and materials* in many ways. It is *quickly installed — in any weather*, because it is easy to handle and is not affected by moisture or temperature. Yet Ribform will carry normal roof loads over spans up to 64 inches, because its unique design is stronger than ordinary corrugated patterns.

Ribform *saves concrete*, because it carries the load with minimum deflection, and *eliminates temporary bridging* because it is a rigid centering and exerts no side pull on joists. Ribform *speeds the job*, because it provides a safe work platform and also permits the slab to be poured and finished in one operation.

For complete details on Milcor Ribform, including load tables, section properties and suggested specifications, see Sweet's, section 2h/In, or write for Milcor catalog No. 245.

Welding to structural supports is done in the ribs of the sheet.



MILCOR® Ribform

It pays . . . in many ways . . . to specify Milcor Steel Building Products

MILCOR ROOF DECK:	*Sweets, section 2f/InL*
MILCOR CELLUFLOR:	*Sweet's, section 2a/In*
MILCOR ACOUSTIDECK:	*Sweet's, section 11a/In*
MILCOR WALL PANELS:	*Sweet's, section 3b/In*
MILCOR RIBFORM:	*Sweet's, section 2h/In*
MILCOR METAL LATH:	*Sweet's, section 12a/In*
MILCOR ACCESS DOORS:	*Sweet's, section 16J/In*
MILCOR HOLLOW METAL DOORS AND FRAMES:	*Sweet's, section 16b/In*

INLAND STEEL PRODUCTS COMPANY Member of the INLAND Steel Family

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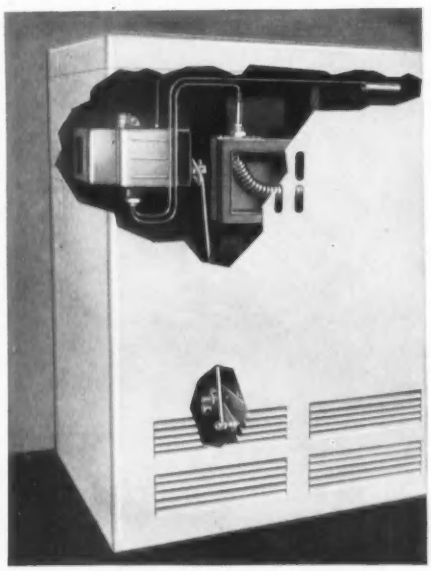
RD-30

Look...no wall thermostat!

New Controls with Unit-Mounted Thermostats Are . . .



All controls are inside

MORE ACCURATE • PROTECTED FROM DUST

TAMPERPROOF • FASTER RESPONDING

Barber-Colman now offers the most advanced "packaged" control systems" for every unit ventilator installation — steam, hot water, hot and chilled water, gas and electric.

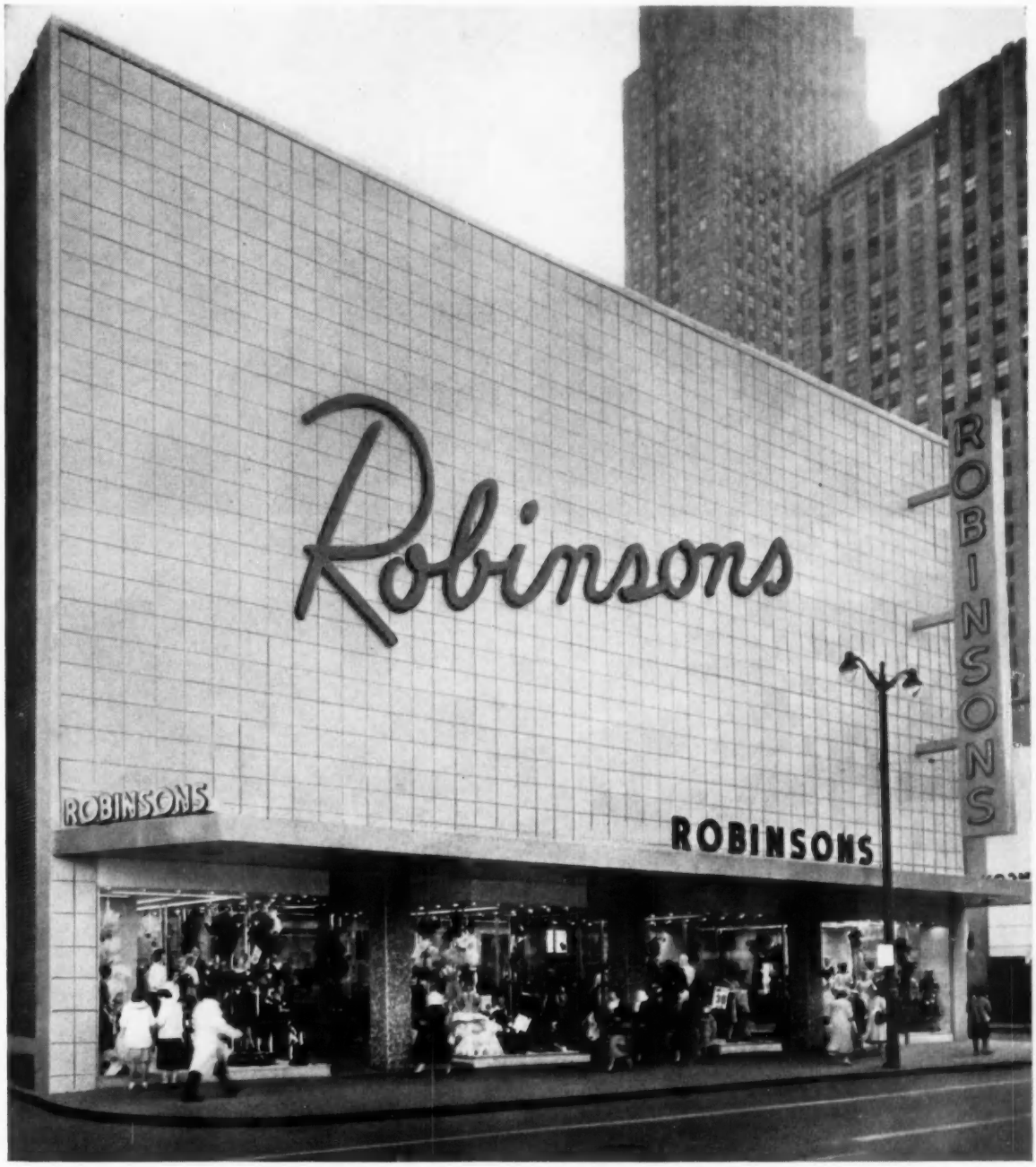
All elements of a Barber-Colman unit ventilator control system, *including the thermostat,* are mounted within the unit ventilator enclosure. This eliminates the need for a wall-mounted thermostat, substantially reducing installation costs and providing greater control accuracy. It also means that factory installation of controls is practical.

Having the thermostat mechanism enclosed in the unit eliminates chalk dust and dirt problems. Temperature tampering is also eliminated. Even more important, unit mounting permits superior control through the use of the "dual element" aspirated thermostat principle. This is the approved temperature control principle employed in the most exacting laboratory installations.

Ask for booklets entitled "Better Control Electrically" and "Unit Ventilator Application File." These two new booklets explain why Barber-Colman electric control is superior and give specifications and details on control systems for all leading makes and models of unit ventilators. Call your Barber-Colman representative or write today.

BARBER-COLMAN COMPANY

Dept. P, 1104 Rock Street, Rockford, Illinois



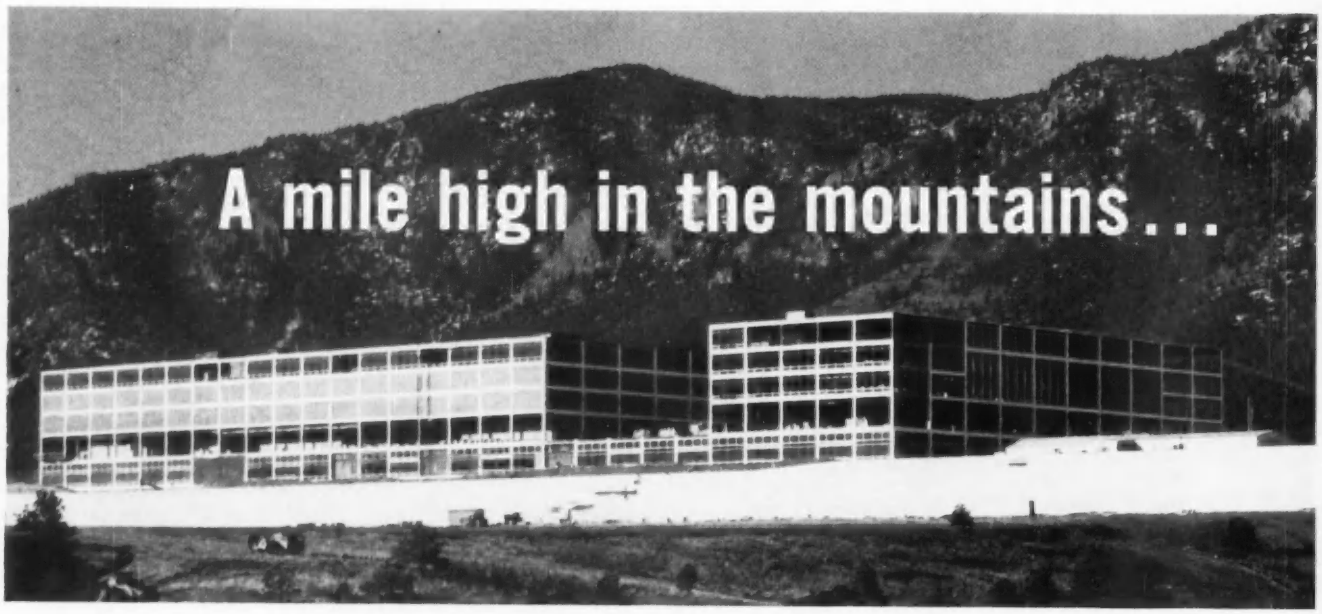
CERAMIC VENEER CREATES COLOR INTEREST

for store modernization or new construction on busy city streets or in suburban shopping centers. It is used extensively to give facades a modern, more colorful appearance. For the facing and surrounds of this store in Cincinnati, Ohio, Grayson-Robinson Stores, Inc., architects, specified 1¼" thick grey Ceramic Veneer with brown mottled overtone. Kaplan Contractors, Inc. were the builders. Colorful literature illustrating the versatility of Ceramic Veneer is available on request. Also without charge we will gladly furnish construction detail, data, color samples and advice on preliminary sketches. Write or phone us today for complete information.

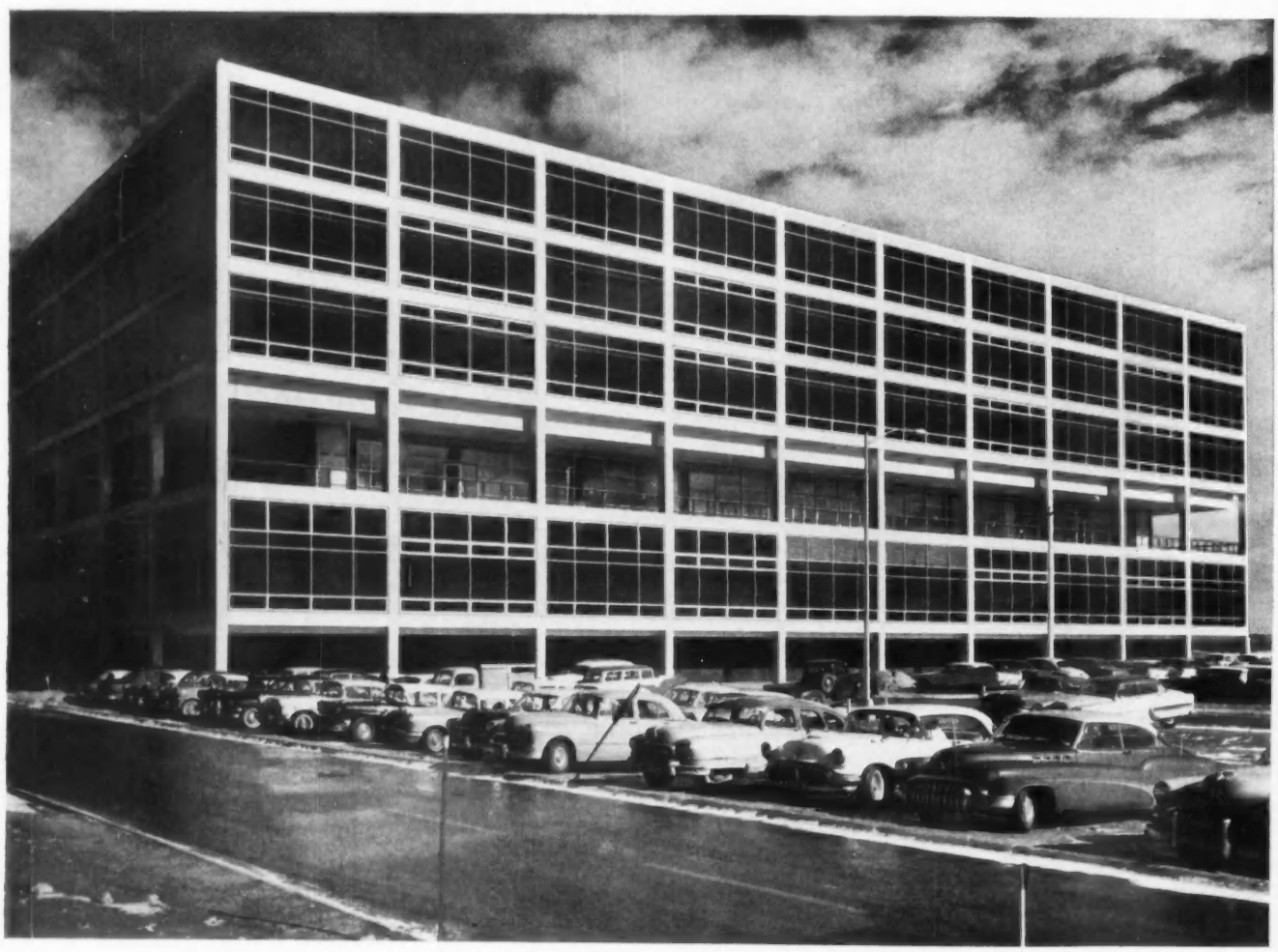
FEDERAL
SEABOARD
TERRA COTTA
CORPORATION

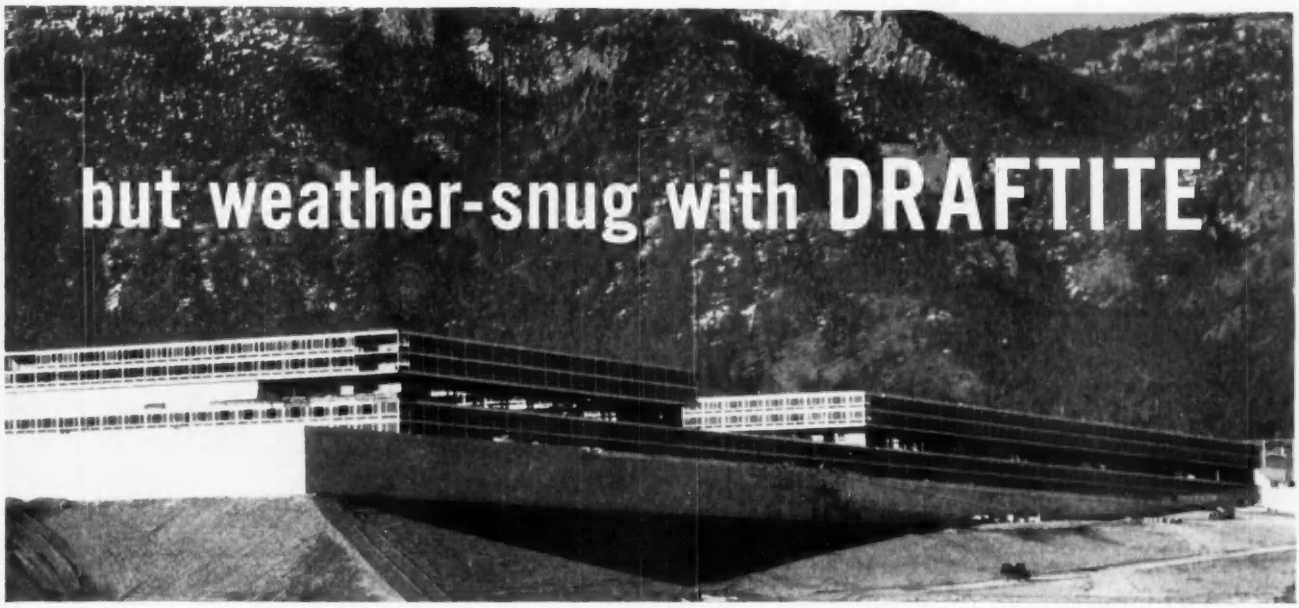
10 E. 40th St., New York 16, N.Y.
Plant at Perth Amboy, N. J.

F S T C



U. S. Air Force Academy, Colorado Springs, Colorado. Curtainwall System and Windows by Cupples. Architects: Skidmore, Owings and Merrill. Equipment Engineers: Walter Dorwin Teague Associates.





U. S. Air Force Cadets are in the clouds even where they live and study!

And winter nights can be *cold*. But the new Academy gives them summer comfort *inside* . . . by keeping rough mountain weather *outside*. Easily and absolutely . . . with the new DRAFTITE weatherstripping.

DRAFTITE Vinyl Compression Seal is installed on all hopper-vent windows in the Academic Complex. Durable, low-cost, easy-to-install, DRAFTITE Compression Seal gives double draft protection . . . because each lip of the vinyl arch compresses, seals perfectly. And eliminates metal-to-metal contact. In effect, it performs the function of a gasket under compression. It's ideal, too, for casement, projected, and awning type windows. Won't pull out, eliminating service calls.

Another DRAFTITE product, Wool Pile Weatherstrip, is used in the Academy buildings on sliding windows where friction is a factor. It offers minimum resistance to opening of windows, with maximum protection against infiltration of air, dust and water around the perimeter of the opening. Other products are Neoprene seals for Curtainwall Systems.

Call or write today for free samples and complete details on Draftite Compression Seal and Draftite Wool Pile Weatherstrip.

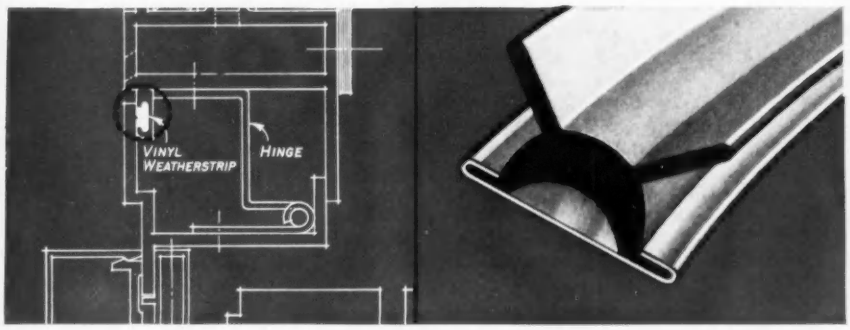
BUILDING PRODUCTS DIVISION

The Standard Products Co.

316 FISHER BLDG., DETROIT 2, MICHIGAN

General Office: Cleveland, Ohio • Plants in Lexington, Kentucky, and Fullerton, California.
In Canada . . . Standard Products (Canada) Ltd., Box 427, Windsor, Ontario

DRAFTITE VINYL COMPRESSION SEAL – Nonmigrating vinyl. Aluminum gray in color. With 302 stainless-steel core. Can be lacquered with rest of window. Section drawing shows installation in hopper windows of Academic Complex.



DRAFTITE WOOL PILE WEATHERSTRIP – With 302 stainless steel cores, .281" overall width. Used on sliding windows where friction is a factor.

Yes, Times Have Changed...

(A Short History of Architectural Progress)

Time was when frame construction was sufficient for most requirements, and the cut-out half moon symbolized the only decor known to the trade.

Most requirements, but not all. Halloween pranks, for example, caused no end of consternation and inconvenience. (See illustration.)

Architecture has marched hand in hand over the years with advances in human comfort, until today not even our museums preserve what once served virtually every American family.

Enough of the past.

True, architecture must be functional to make the most of today's materials.

But the artist in every architect always insists on fine appearance, yea beauty, in *every* room of *every* building the architect designs.

Metal partitions, non-tippable successors to the object of small boys' fun, deserve careful choice as to details of construction, gauge of steel, color availability, and ease of installation.

For the best, call on Nicholson. Spec sheets on request, or check Sweet's Catalog. P-100

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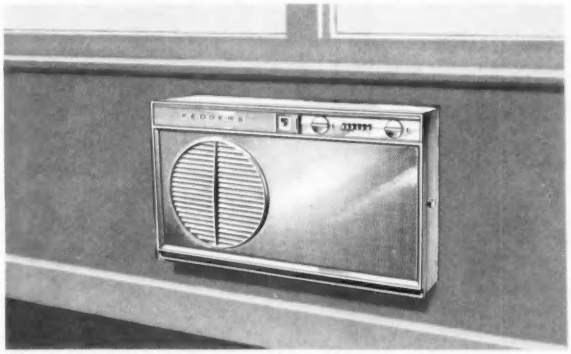
Through-the-wall Fedders save $30,000 on year 'round heating and cooling for college dormitories in Texas

Sam Houston State Teachers College in Huntsville, Texas, reports that approximately $30,000 was saved by selecting 432 through-the-wall Fedders Four Seasons heat pump air conditioners instead of conventional central heating and cooling systems.

"Savings were an important consideration," college authorities state, "but we chose Four Seasons units basically because they provide the most modern and effective method of heating and cooling, utilizing filtered air year 'round."

Today Fedders Four Seasons are being installed in a wide variety of buildings for a complete year 'round cooling and heating job—in churches, schoolrooms, restaurants, motels, apartments and homes.

Talk to a Fedders representative, next time you plan a building. Whatever your air conditioning requirements—cooling and heating or straight cooling—Fedders has the correct equipment for you. For more information, mail the coupon below.



Whatever your heating and cooling requirements

FEDDERS

THROUGH-THE-WALL AIR CONDITIONERS
THROUGH-THE-WALL HEAT PUMPS

DESIGN CONDITIONS

Heating Season—5 months
Design for 20° Outside—75° Inside

Cooling Season—7 months
Design for 95° Outside—75° Inside

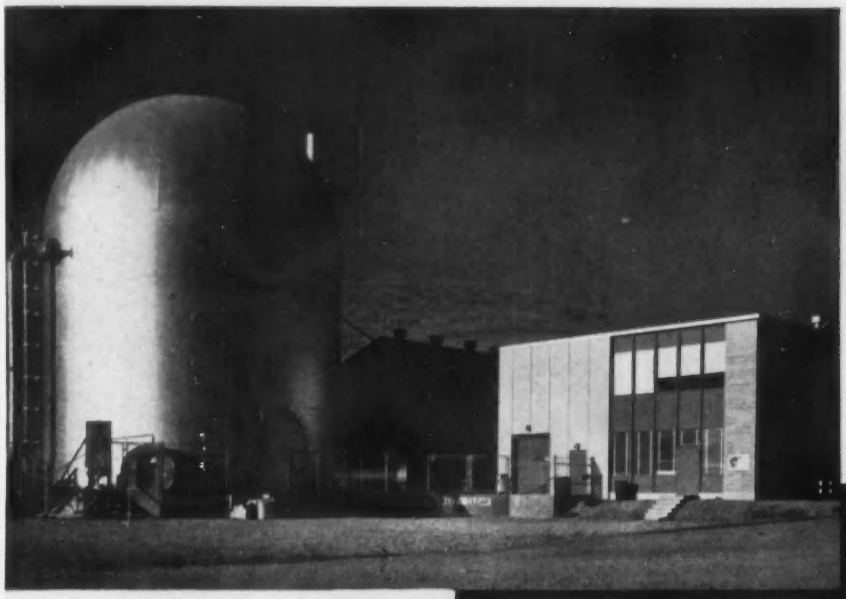
Fedders Corp.—Dept. AR-49
Maspeth 78, New York
Please send me, without obligation, complete information on Fedders air conditioners.

Name .....

Firm Name .....

Address .....

City ..... State .....



Vallecitos Atomic Power Plant

Pleasanton, California

The first all privately-financed nuclear power plant.

Operated by
Pacific Gas & Electric Co.
and
General Electric Co.

Architects and Engineers:
Bechtel Corp.
all of San Francisco

Mech. Contractor:
Coast Heating and Ventilating Co.
Oakland, Calif.

POWERS CONTROL

here is used in the power plant. It meets the rigid standards required in regulating ventilation supplying personnel with safe, comfortable, uncontaminated air.

Industrial Reactor Laboratories, Inc.

Plainsboro, N. J.

Architects:
Skidmore, Owings & Merrill

Mech. Engineer:
Guy B. Panero

Mech. Contractor:
August Arace, Inc.

General Contractor:
Turner Construction Co.

Prime Contractor **AMF ATOMICS**

POWERS CONTROL

here regulates the heating, ventilating and air conditioning in the reactor and laboratory buildings.

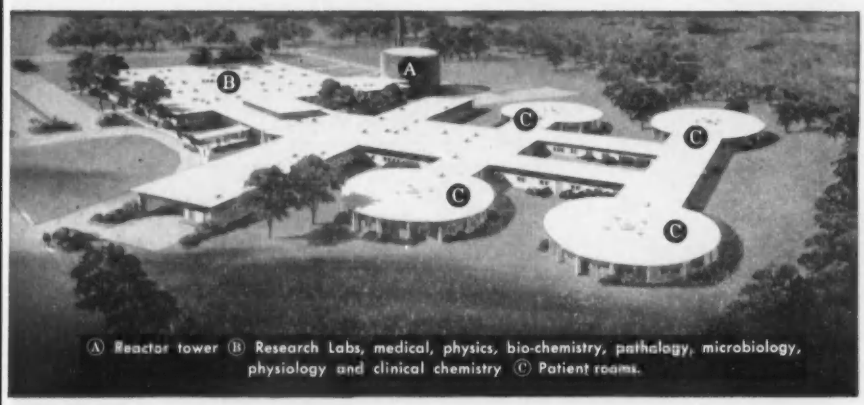
Owner-members of Industrial Reactor Laboratories: American Machine & Fdry. Co., American Tobacco Co., Atlas Powder Co., Continental Can Co., Corning Glass Works, National Distillers & Chem. Corp., National Lead Co., Radio Corp. of America, Socony Mobil Oil Co., U. S. Rubber Co.

Medical Research Center, AEC Brookhaven National Laboratory,

Upton, N. Y. — Nuclear research here will benefit all mankind. The first nuclear reactor (1000 kw) designed specifically and exclusively for medical research and treatment is located in the reactor tower Ⓐ shown below.

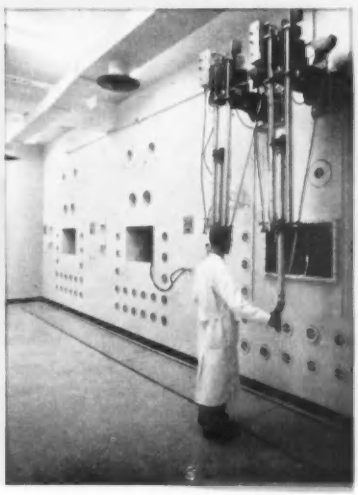
Architects: **Eggers and Higgins** • Mechanical Engineers: **Syska & Hennessy**
Mechanical Contractor: **Malan Construction Corp.** • All in New York City

POWERS CONTROL in these completely air conditioned buildings regulates temperature, humidity and ventilation.



Ⓐ Reactor tower Ⓑ Research Labs, medical, physics, bio-chemistry, pathology, microbiology, physiology and clinical chemistry Ⓒ Patient rooms.

Below: Operators at Industrial Reactor Laboratories, protected by 3 ft. thick viewing windows, conduct experiments with master-slave manipulators shown below.

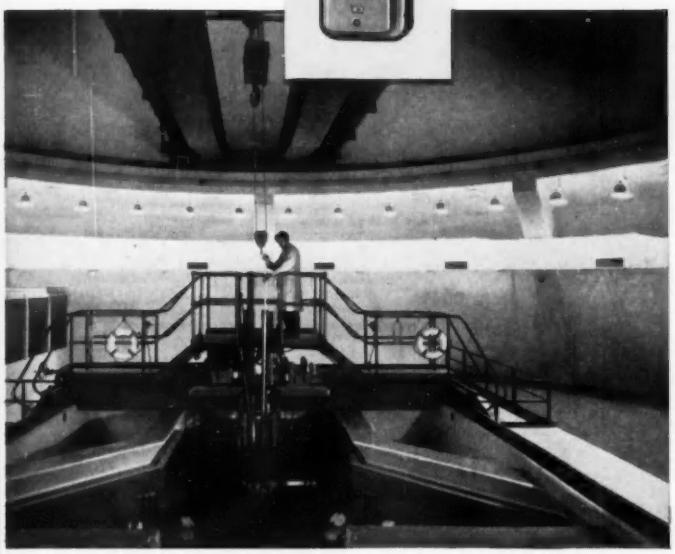


POWERS CONTROL

...keeps pace with the demands of modern science and industry

At the Birth of the Atomic Age in 1942 at the University of Chicago, temperature of the space occupied by "the first nuclear reactor" was controlled by Powers Type K Thermostats installed under the West Stands of Stagg Field.

In 1944 at Hanford, Wash., Powers Transmitter Controls regulated temperature of the huge volume of water required for cooling the nuclear reactors. The capacities of ten 2500 ton YORK refrigeration compressors, made especially for this important project, were regulated by Powers Series 100 Transmitters and Receiver Controllers. They also controlled 24" butterfly valves used to regulate the distribution of refrigerated air.



Inside the dome at **IRL** a crane services reactor pool. Powers control here, regulates the ventilation and air conditioning. Note ducts on circular wall.

Accurate Control of Air Conditioning is Vital in modern nuclear reactor plants. Safety and comfort of employees and reliability of ventilation controls are specially important in radioactive "hot" areas. In the three prominent installations on the opposite page, Powers control is required to meet rigid standards of performance.

Other Users of Powers Controls: Some AEC buildings in Oak Ridge, Tenn.; at Argonne National Laboratory, air conditioning and cooling water for a Cyclotron is regulated by Powers; in AEC plants at Portsmouth and Fernald, Ohio and Weldon Spring, Mo.; in Atomic Energy of Canada Ltd., buildings 145 and 465 at Chalk River, Ont., Powers controls heating and air conditioning.

Nuclear Reactor Research Facility of the U. S. Naval Research Laboratory, Wash., D.C. is air conditioned and Powers controlled.

At Illinois Institute of Technology, Chicago, the first nuclear reactor for private industrial research was installed by the Armour Research Foundation. Powers air conditioning control is installed here in the Physics and Electrical Engineering Research building in which the reactor is located.

For Your New Building — Whether its a school, hospital, commercial or industrial building, ask your architect or consulting engineer to include a Powers Quality System of Temperature Control. You will benefit from — **Powers complete responsibility** for a correctly engineered control system, proper installation, continuous successful operation and *SERVICE* when required from offices in 85 cities.

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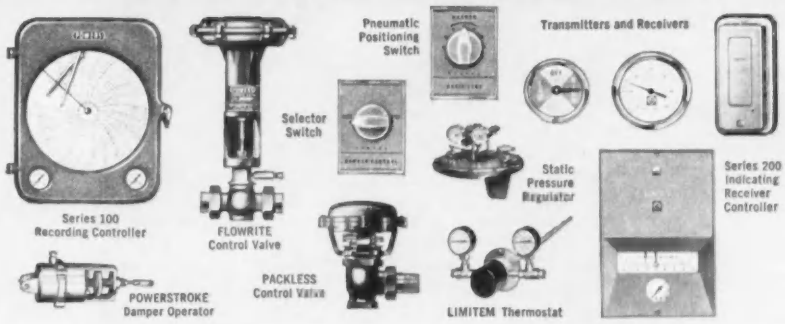
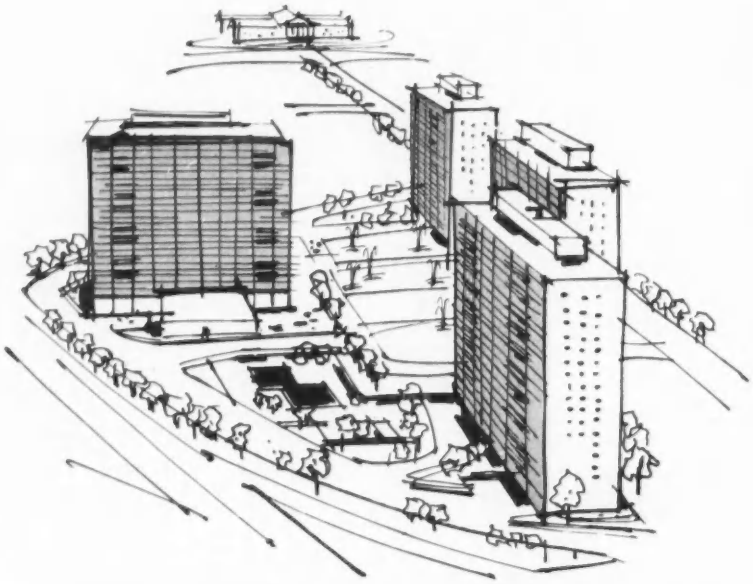
SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A. and Canada*

65 Years of Automatic Temperature, Humidity Control

A few Powers Temperature . . Humidity . . and Pressure Controls



Powers Graph-O-Matic Control Centers are also available in Console models. All types are custom built to meet the requirements of any comfort or process control system.



PARK TOWNE PLACE, Philadelphia,

where quality partitions contribute to privacy and safety

The variety of luxurious suites comprising Park Towne Place, Philadelphia, are divided by high-quality partitions. These were formed from Penmetal hollow metal studs, to which gypsum lath was clipped. The plaster was then machine-applied. This construction provides highly efficient sound control as well as fire-resistive construction.

Park Towne Place offers sunny, spacious living within minutes of the city. Every suite is an outside apartment with unobstructed view. Other amenities: year-round central air conditioning, underground parking, shopping colony, bath club.

These new apartments are an example of the continued trend to Penmetal products for fine building everywhere. Find out how these products can help you. Send for catalog 624-L.

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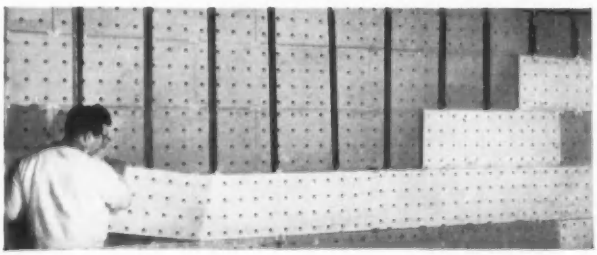
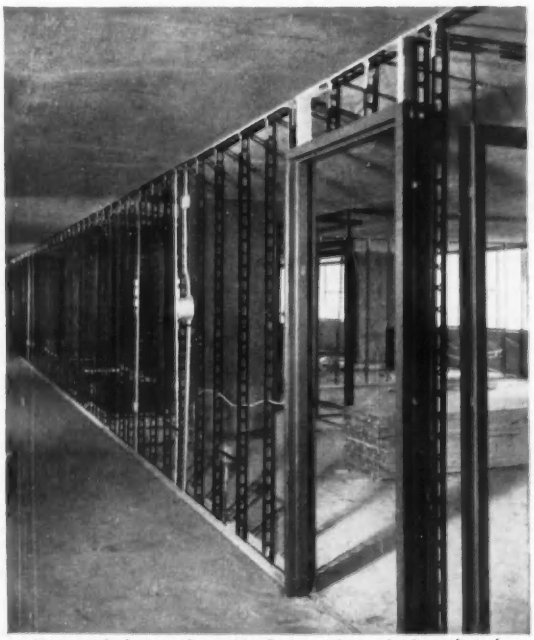
General Sales Office: 40 Central Street, Boston 9, Mass.
Plant: Parkersburg, W. Va.
District Sales Offices: Boston, New York, Philadelphia, Pittsburgh, Chicago, Detroit, Dallas, Little Rock, Seattle, San Francisco, Los Angeles, Parkersburg, St. Louis

PM-204

Penmetal 1869

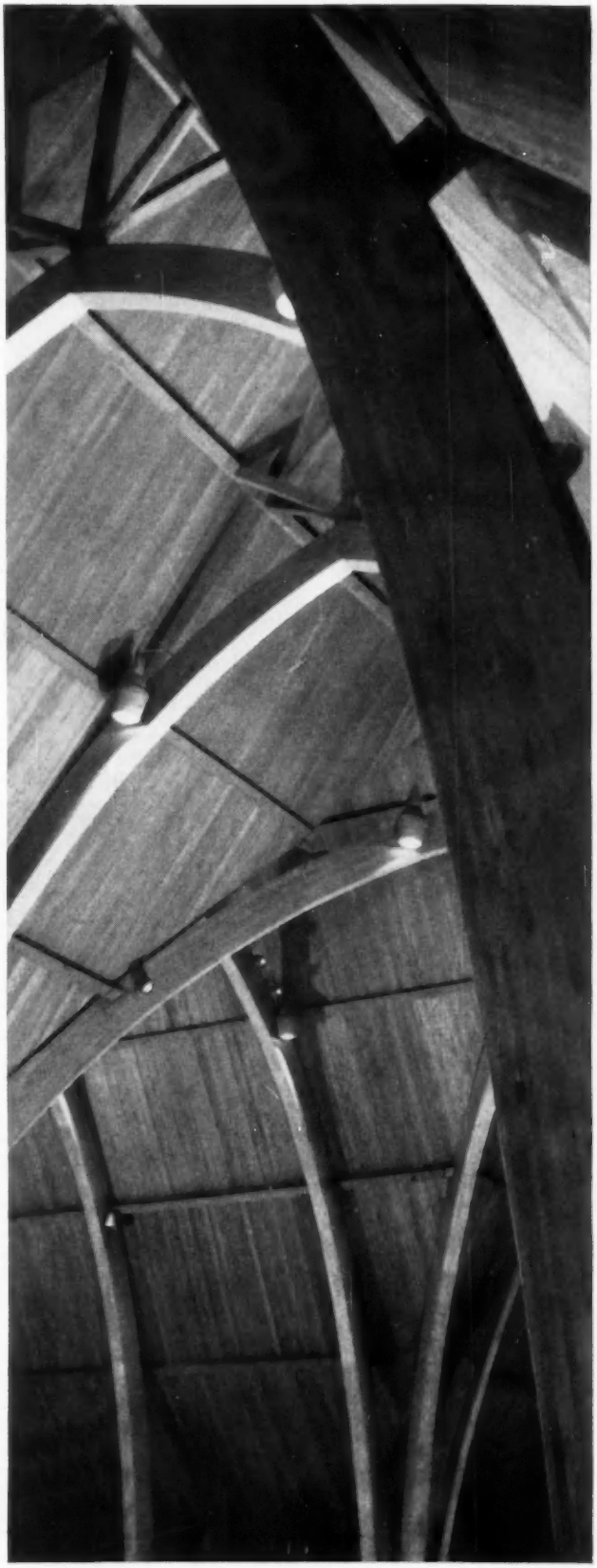
a name to remember

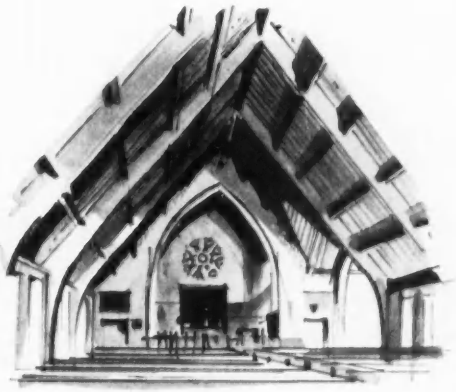




Gypsum lath was clipped to Penmetal punched steel studs.

Architects: John Hans Graham & Associates, Washington, D.C. and Milton Schwartz, A.I.A., Philadelphia
General Contractor: Parkway Triangle Construction Company, Philadelphia
Plastering Contractor: Venzie Corporation, Philadelphia
Interior Designer: Melanie Kahane Associates, Inc., A.I.D.





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the strength of WOOD

Not merely strong, but strong and light. Of all building materials, only the organic, cellular structure of *wood* . . . solid or laminated . . . can offer the favorable strength-weight ratio and the versatility to stimulate imaginative designing.

And wood's strength need not be hidden. The natural beauty of wood's many species recommends its exposure in beams, paneling, cabinetwork, other uses.

If your problem is strength-with-lightness, strength-with-beauty, your solution is wood.

For more data on designing with wood, write: Wood Information Center

NATIONAL LUMBER MANUFACTURERS ASSOCIATION
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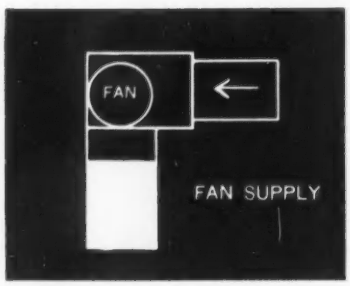
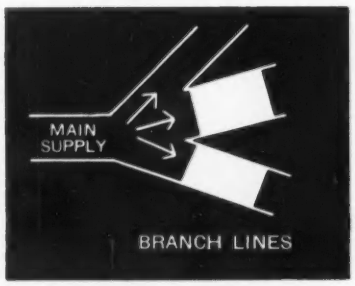
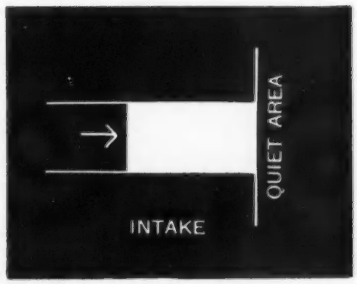
SPECIFY AIRCOUSTAT FOR THESE TYPICAL LOCATIONS:



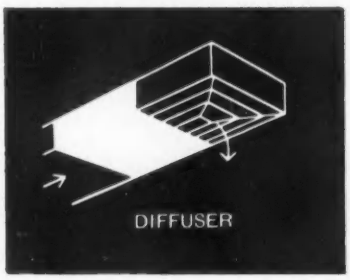
(1) Supply Fan Main—Effectively keeps fan noise from being transmitted through main ductwork.



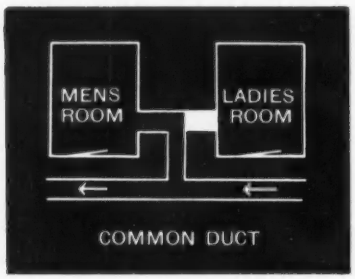
(2) Branch Lines—Selective treatment of special areas where additional noise reduction is essential.



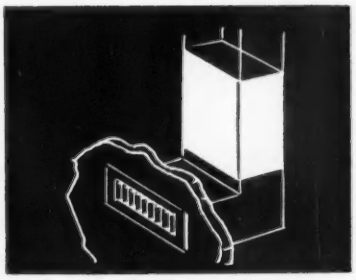
(3) Critical Areas—Prevents noise from entering or leaving rooms such as conference rooms or studios.



(4) Diffusers—Prevents duct-transmitted noise from entering rooms requiring a greater degree of quiet.



(5) Common Ducts — Prevents "cross talk" between rooms such as lavatories or conference rooms.



(6) Return Duct Systems—Prevents transmission of fan noise in return systems.

Get This Important New Book . . . Write today for your copy of the AIRCOUSTAT Selection Manual, a quick guide to the right unit or combination of AIRCOUSTAT units to eliminate duct-transmitted noise in all air handling systems. Write KOPPERS COMPANY, INC., 3004 Scott St., Baltimore 3, Md.

Specify Aircoustat For The Ultimate in Packaged Sound Conditioning

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SOUND CONTROL

METAL PRODUCTS DIVISION

Engineered Products Sold with *Service*

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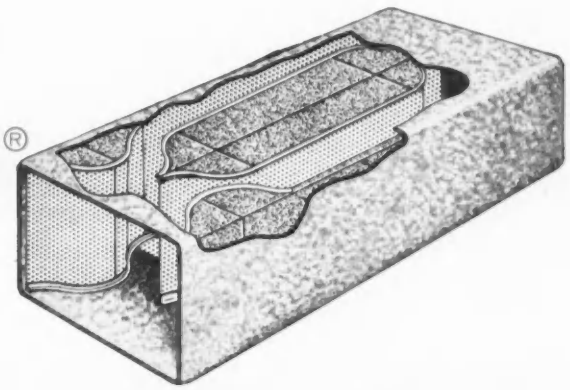

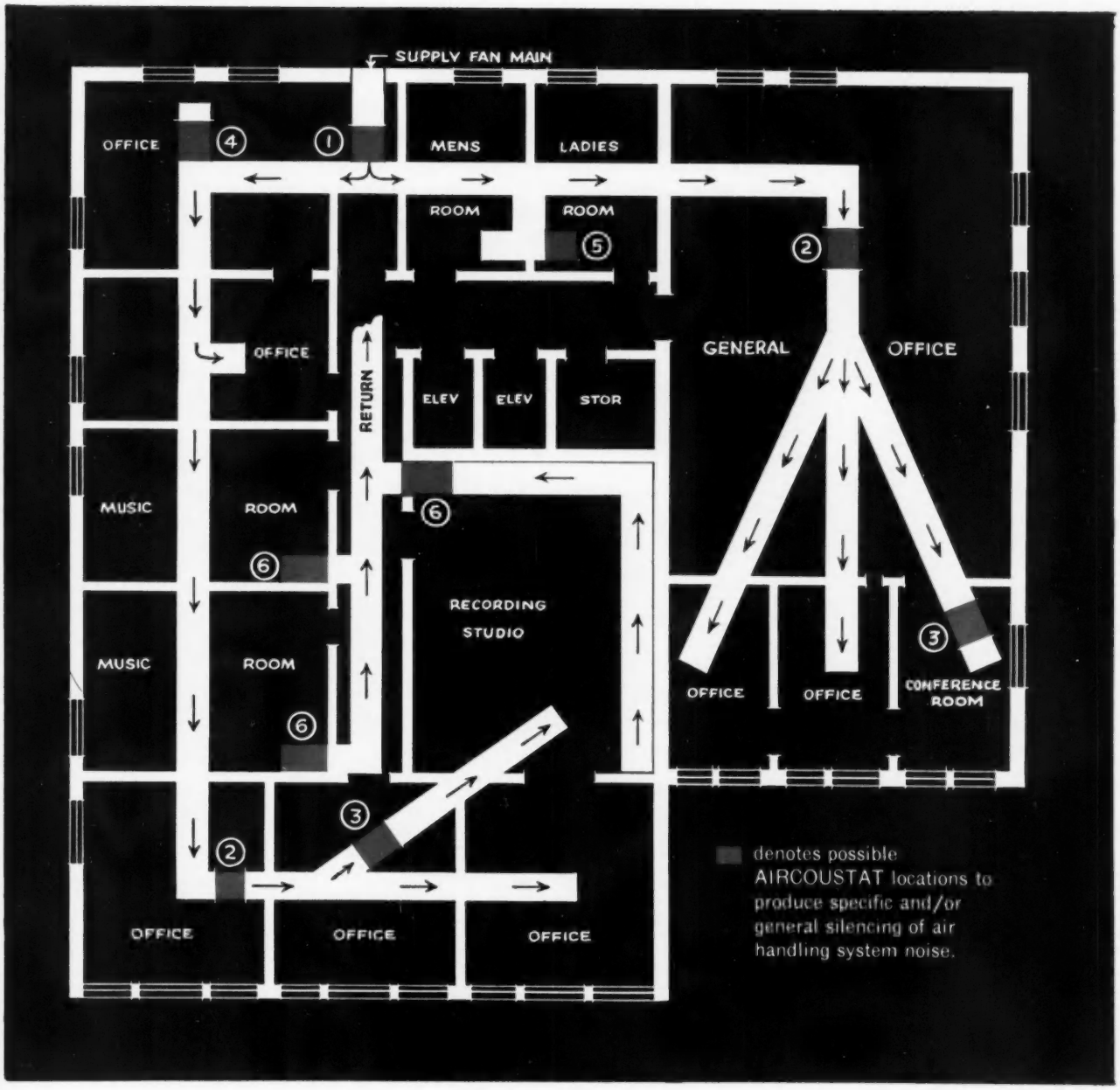

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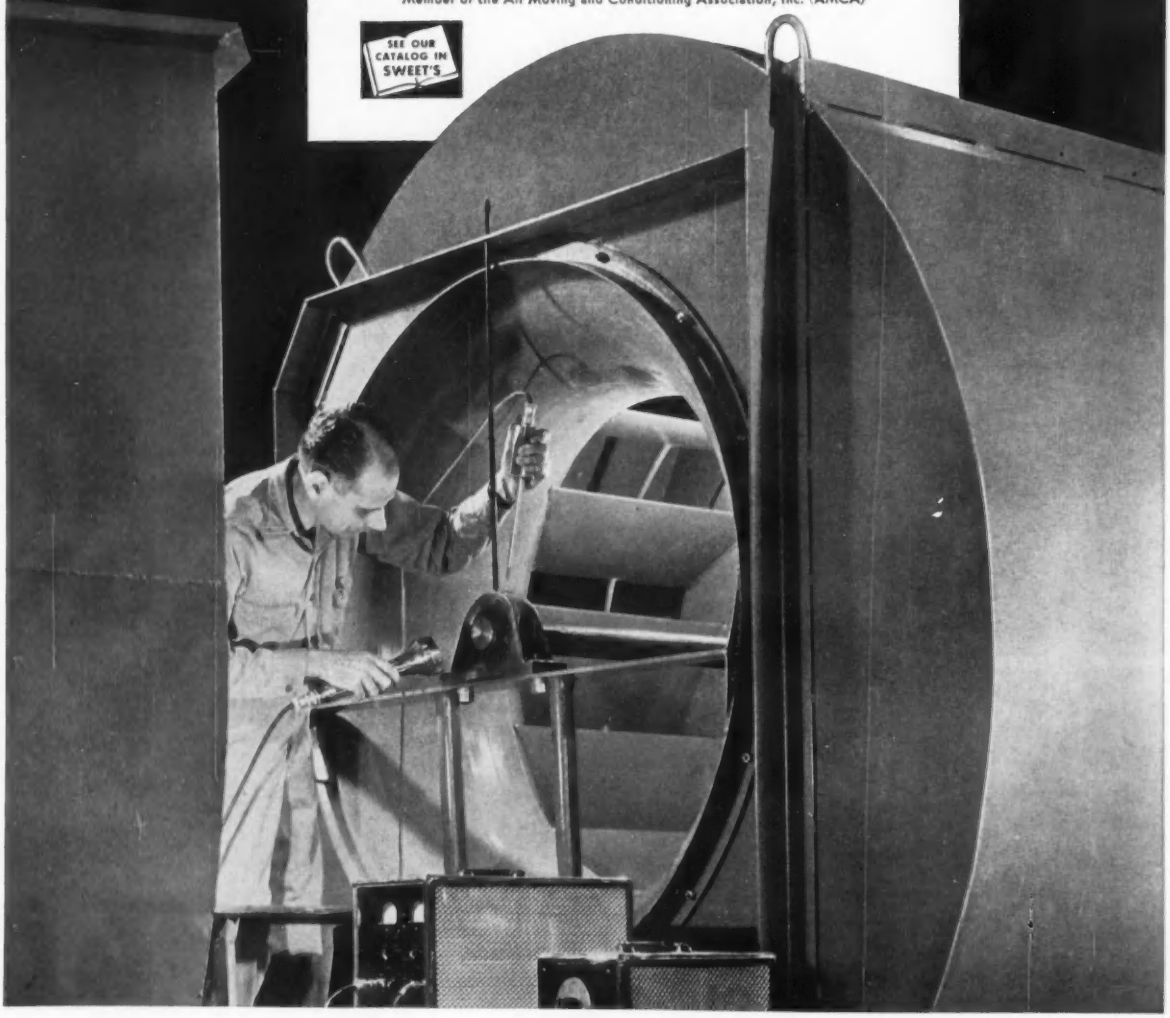

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- Sea Isle Green
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- Sahara Beige
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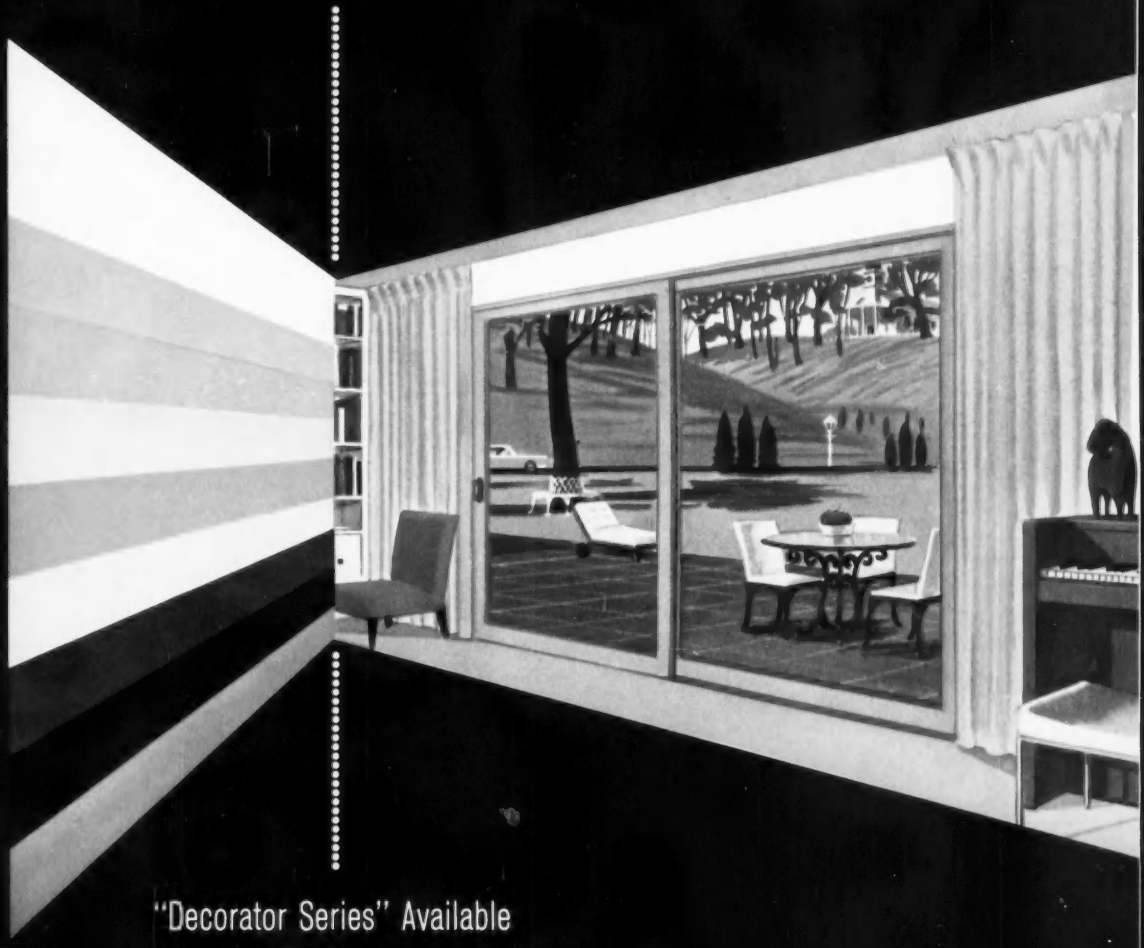

"Decorator Series" Available
in Both Senior Door and
Imperial Weatherwall

New Sun Valley Color Process
Durable, Chip-Resistant and Color Fast;
Not Paint, Enamel or Anodizing

Specifically better...
Sun Valley
INDUSTRIES INC.

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DECORATOR COLORS ARE DESIGNED FOR EVERY USE

For residential, commercial and institutional applications, Sun Valley makes the use of color as practical as it is appealing to the eye. Aluminum sliding glass doors add real value wherever used. Now, with Sun Valley offering a choice of ten durable decorator colors, this value is multiplied far in excess of its cost.

DECORATOR COLORS ARE ORIGINAL

Colors for Sun Valley's two new decorator series have been created by Virginia Woodbridge, member N.S.-I.D., authoress and lecturer on interior decoration. She has chosen a selection that will blend with or accent any color scheme . . . interior and exterior.

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Sun Valley colors are a new process not paint—not enamel—not anodizing, but a color impregnated resin with high thermoplastic properties.

Sun Valley colors can take it. Temperature and impact tests, dramatically exceeding normal conditions, have virtually no effect on the fine finish.

Sun Valley colors have withstood 500 hours of the grueling Weatherometer test which alternately simulates tropical heat and violent storm conditions, proving outdoor durability of the highest order.

Sun Valley colors have been subjected to a 2,000 hour salt spray test with absolutely no harmful effect.

Sun Valley colors are chip-resistant. Far superior to any paint or enamel.

Sun Valley colors are durable. They resist the effects of detergents and cleaning compounds two to five times longer than regular painted surfaces.

Sun Valley colors never vary from one production run to another.

Sun Valley aluminum doors can be repainted any time a color scheme is changed. The fine base provided by the original coating assures an effective bond every time.

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- Tahiti Yellow . . . . . SV 600-02
- Sea Isle Green . . . . SV 600-03
- Bahama Blue . . . . . SV 600-04
- Monaco Pink . . . . . SV 600-05
- South Sea Coral . . SV 600-06
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- Jamaica Brown . . . SV 600-08
- Manhattan Black . . SV 600-09
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SV 591

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Milwaukee County War Memorial Center. Eero Saarinen & Associates, Architects. Maynard W. Meyer & Associates, Associate Architects. Ammann & Whitney, Structural Engineers. James McHugh Construction Company, General Contractors.

Milwaukee's new War Memorial proves you can do the unusual with Reinforced Concrete

There are a number of noteworthy reinforced concrete buildings under construction and recently completed in the Milwaukee area. Prominent among them is the new War Memorial, part of a cultural community center dedicated to honoring Milwaukee County's war dead.

The lightweight reinforced concrete cantilevered upper wings present an effect of soaring flight. Glass walls on all sides of the main lobby provide unobstructed views of Milwaukee's lake front and downtown area. The Center has six levels, including a basement and subbasement.

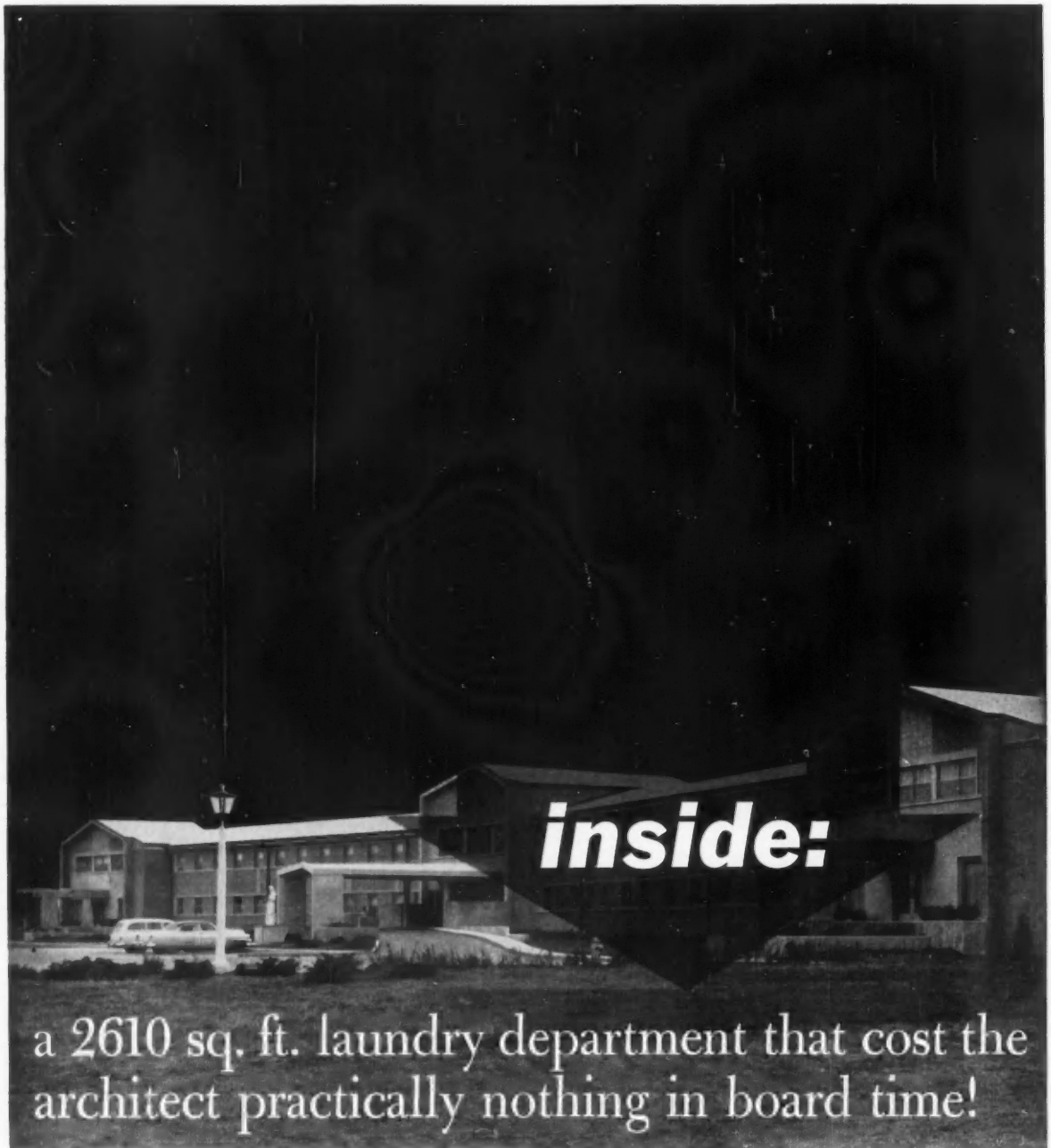
Two other outstanding examples of recently completed Reinforced Concrete structures in Milwaukee

Central YMCA Building, Milwaukee. Architects: Grassold-Johnson and Associates. Consulting Engineer: Charles S. Whitney. General Contractors: Gebhard-Berghammer, Inc.

Milwaukee Arena. Architects: Eschweiler & Eschweiler. Consulting Engineer: Charles S. Whitney. General Contractors: Hunzinger Construction Co.

CONCRETE REINFORCING STEEL INSTITUTE CRSI FOUNDED 1924

Concrete Reinforcing Steel Institute *38 South Dearborn St., Chicago, Ill.*



Sisters of Mercy Provincialate, Frontenac, Missouri. Architect: Bernard F. McMahan

Under the direction of Bernard F. McMahan, Architect, all the laundry facilities were planned, designed, arranged, specified, cost estimated and installed by engineers of The American Laundry Machinery Company. Detailed drawings, a comprehensive floor plan layout and complete specifications accompanied the proposal to assure Sisters of Mercy Provincialate the very finest laundry equipment for its specific needs, with minimum investment, lowest operating cost and years of dependable service.

Your firm, too, may save many man hours and dollars, and your client obtain inestimable benefits, by taking advantage of our complete laundry planning service. Your nearby American representative is listed in your telephone directory. Call him for complete information. No obligation, of course.

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the Barrett SPECIFICATION® Roof becomes the first roof ever bonded for 25 years!

Now the pioneer in the bonding of built-up roofs presents another first—the Quarter Century Bonded Roof.

This is the longest roofing guarantee in the history of the industry—a guarantee made possible by the proud record of the "SPECIFICATION" Roof itself. Since the turn of the century, Barrett "SPECIFICATION" Pitch and Felt have piled up phenomenal longevity records on the leading buildings of America.

The best test—actual performance—conclusively proves that pitch provides the best weather protection for flat roofs. Asphalt absorbs anywhere from two to seventeen times more water than does pitch. Where prolonged exposure to water may be expected, as on flat roofs, pitch is always the expert's choice.

A system of improved quality controls is now used in the manufacture of Barrett "SPECIFICATION" Pitch and Felt, virtually eliminating the possibility of materials failure. Specify the built-up roof that is now guaranteed for five years longer than any other . . . the roof that has always been famous for outliving its bond—the Barrett Quarter-Century "SPECIFICATION" Roof.

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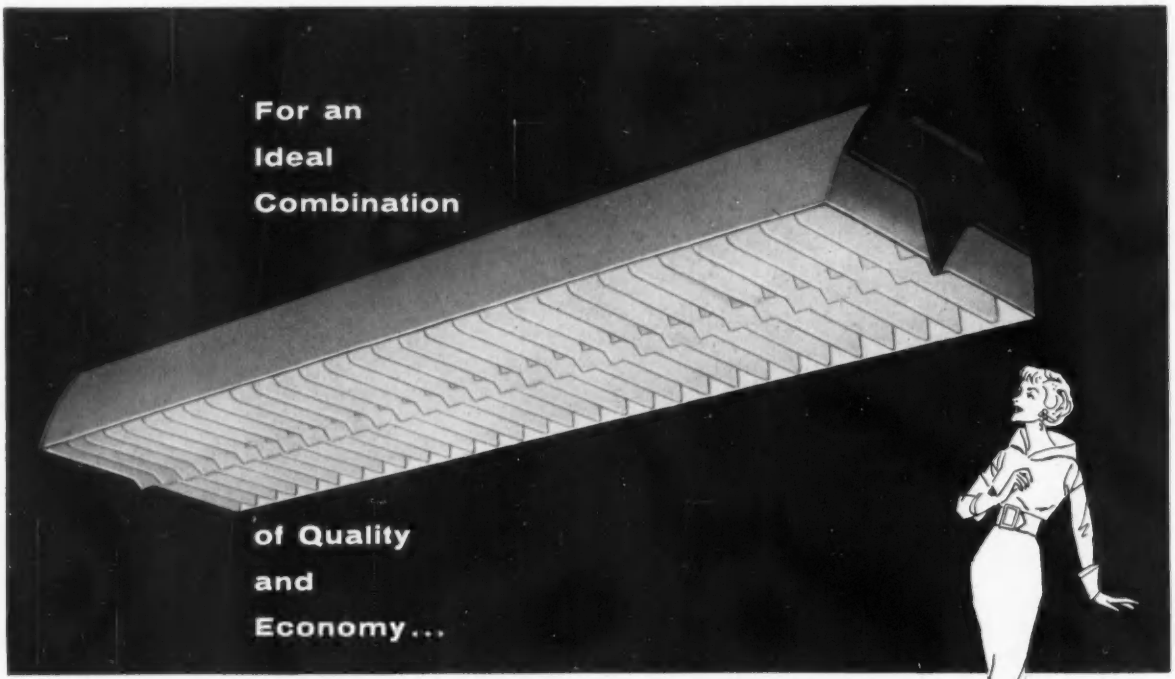

go modern with Sylvania's new Fixture Series...

THE TARTAN

If you have an interest in quality lighting fixtures that feature attractive appearance, efficiency, and versatility, you'll want to know more about Sylvania's new Tartan Series.

This fresh new fixture series offers appealing design and shallower depth for neat, streamlined appearance . . . a wide selection of matching units in 2-lamp and 4-lamp widths in both 4′ and 8′ lengths . . . and the availability of either metal or plastic side panels in any unit. With the Tartan Series you also have a choice of metal louvers with two different cut-offs to tailor the fixtures to the application.

All of these features plus the moderate cost of this up-to-date fixture series now put attractive quality lighting within the reach of everyone planning a lighting installation, whether large or small.

The versatility and high efficiency of the Tartan Series make it the ideal means of lighting for many schools, offices, stores, and other commercial applications as well as for industrial uses where quality lighting is desired.

See for yourself how the Tartan Series can fit your lighting plans. Write for complete information today to:

SYLVANIA LIGHTING PRODUCTS
A Division of SYLVANIA ELECTRIC PRODUCTS INC.
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One 48th Street, Wheeling, West Virginia

Have you kept up to date with the broad range of fluorescent lighting systems and fixtures offered by Sylvania? If not, send for a complete fixture catalog today. A brief glance at the large variety of types and styles of Sylvania lighting equipment will show you why we say—"Go Modern with Lighting by Sylvania."

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Fluorescent Lighting Fixtures and Systems

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First Federal Savings and Loan Association, Chicago, Illinois, Owners
Ralph Milman, Architect *Dahl-Stedman, General Contractors*

The special character of this handsome building is created by the pattern of tubular aluminum mullions three by five inches in cross section. Within the areas so framed, Hope's Aluminum Window Wall units accomodate both windows and spandrels. The spandrels are insulated panels whose outside surface of opaque glass is in the same plane as the clear glazing of the windows. The aluminum of both sash and mullions is bright dip finished, then anodized. Since the building is completely air conditioned the windows are stationary.

This unusual development of a multi-story window wall building is custom construction throughout. Window installation is by Hope's field staff. In the planning, engineers of Hope's Aluminum Division have worked closely with the architects, from the conception of the design. There are many benefits from this procedure. The versatility of Hope's window wall systems can be fully used in harmony with the architects' purposes, obtaining the utmost economy in construction and securing the most soundly engineered window system.

Write for Hope's Catalog No. 162, containing full description with diagrams and detail specifications of three window wall systems, single and multi-story and grid. Included are the safe-limit tables of aluminum mullions.

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

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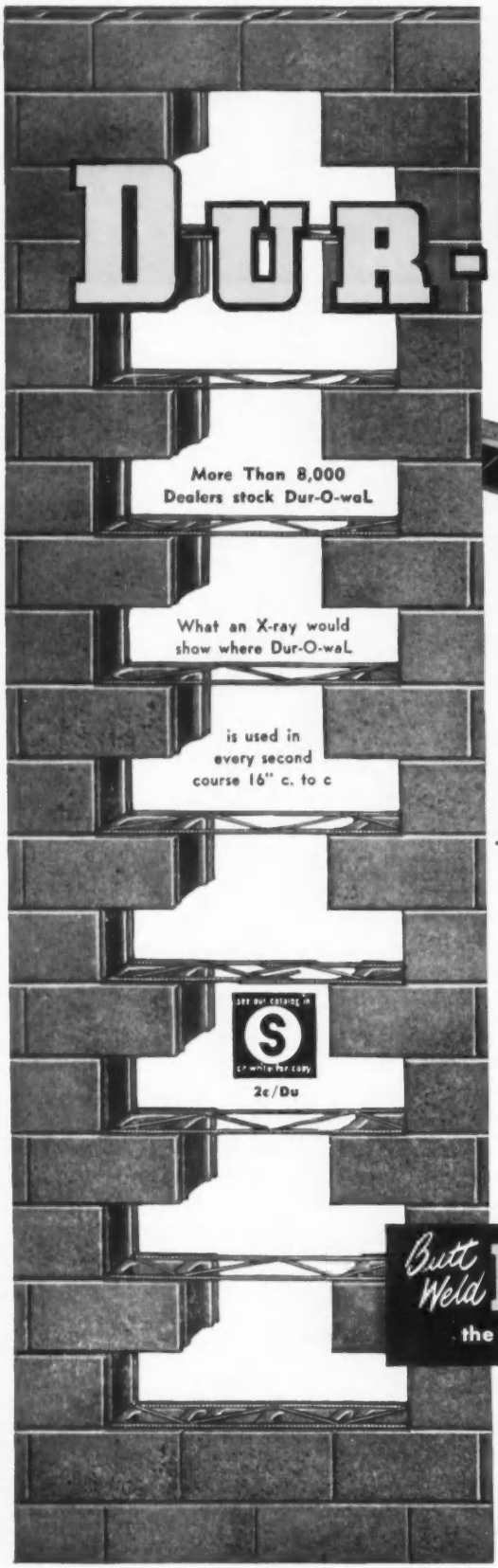

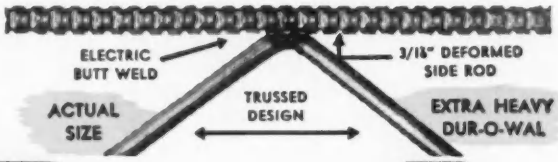

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10-foot lengths . . . 500 lineal feet per bundle

SELECTION TABLE

Wall Thickness	4 in.	6 in.	8 in.	10 in.	12 in.	13 in.
Extra Heavy Dur-O-waL	4-EH	6-EH	8-EH	10-EH	12-EH	13-EH
Wt. per 1000 lin. ft.	247 lb.	250 lb.	257 lb.	266 lb.	276 lb.	282 lb.
Standard Dur-O-waL	4-S	6-S	8-S	10-S	12-S	13-S
Wt. per 1000 lin. ft.	178 lb.	180 lb.	187 lb.	196 lb.	207 lb.	212 lb.

Furnished in either bright basic or galvanized steel. Specify Drip Section Dur-O-waL for Cavity Walls.

NOTE — In determining whether to specify Standard weight or Extra Heavy weight Dur-O-waL, comparisons in following table should be properly evaluated:

	Weight lbs. tensile steel per lin. ft	Surface bond area—sq. in. per lin. ft.	Number of mortar locks per lin. ft.
Standard weight Dur-O-waL	0.19	11.18	3
Extra Heavy Dur-O-waL	0.26	14.14	3

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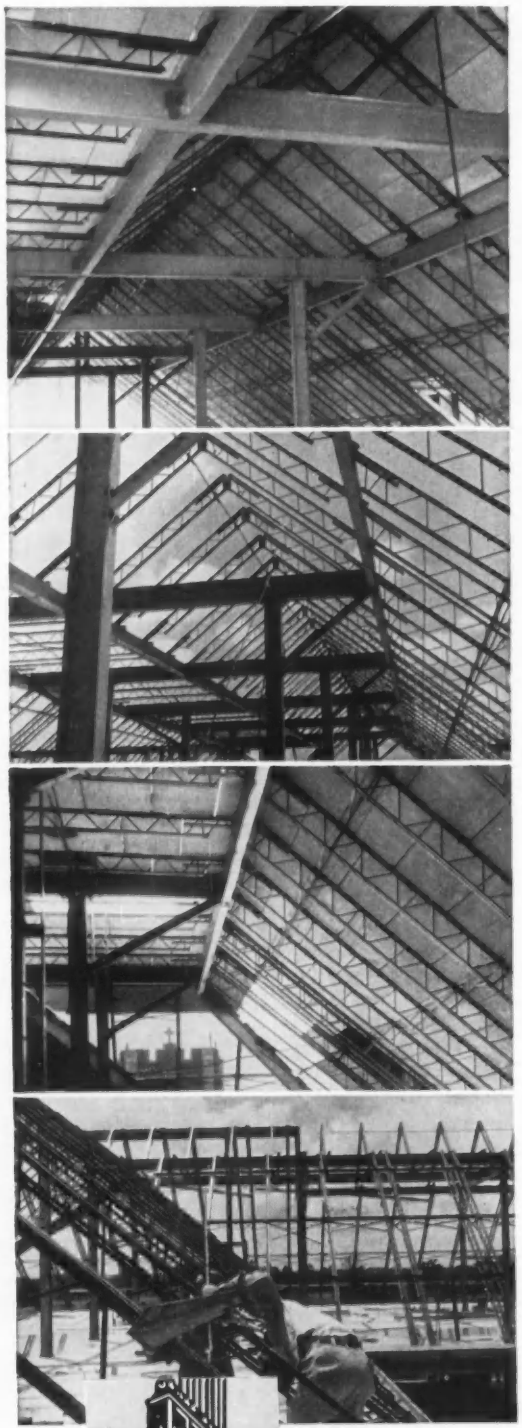

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Architects: Maguolo & Quick, St. Louis
General Contractor: Gamble Construction Co., St. Louis

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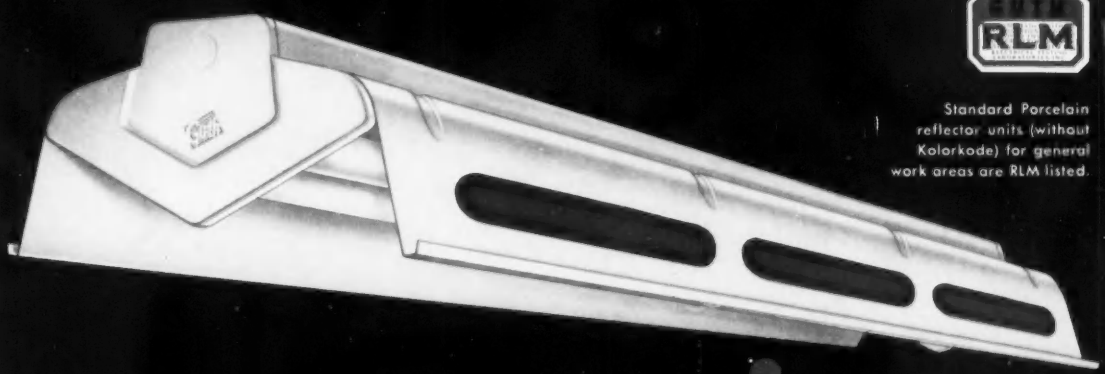

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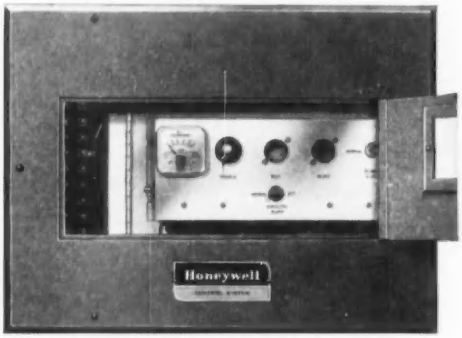

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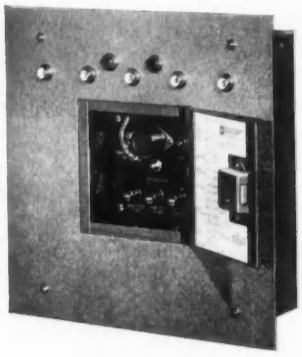

W237 Panel for maximum protection of lives and property in small offices, stores, industrial buildings. Available with standby battery operation that will sound alarm even during a power interruption. System is so foolproof that it can sound the fire alarm even with a double break or ground in the detector wiring. Detection circuit is completely supervised; two independent alarm circuits are provided. Numbered lights on panel quickly, positively indicate fire location. Both detection and alarm circuits are low voltage.

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For additional information, see Sweet's file number 33 B/Mi, or call your nearest Honeywell office, or write Honeywell, Dept. AR-4-57, Minneapolis 8, Minnesota.

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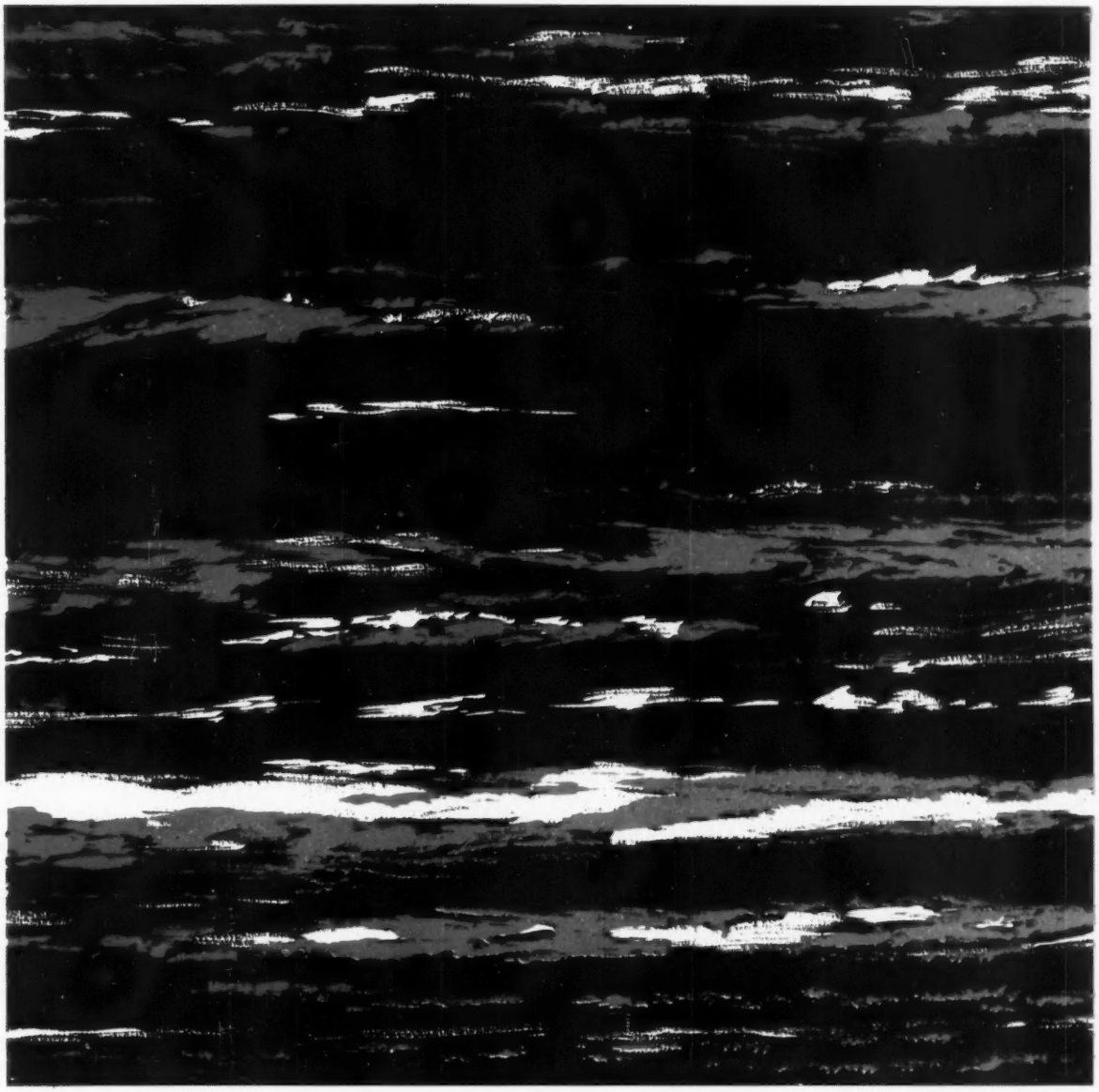

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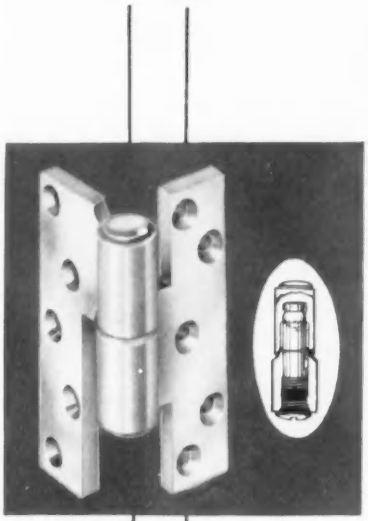

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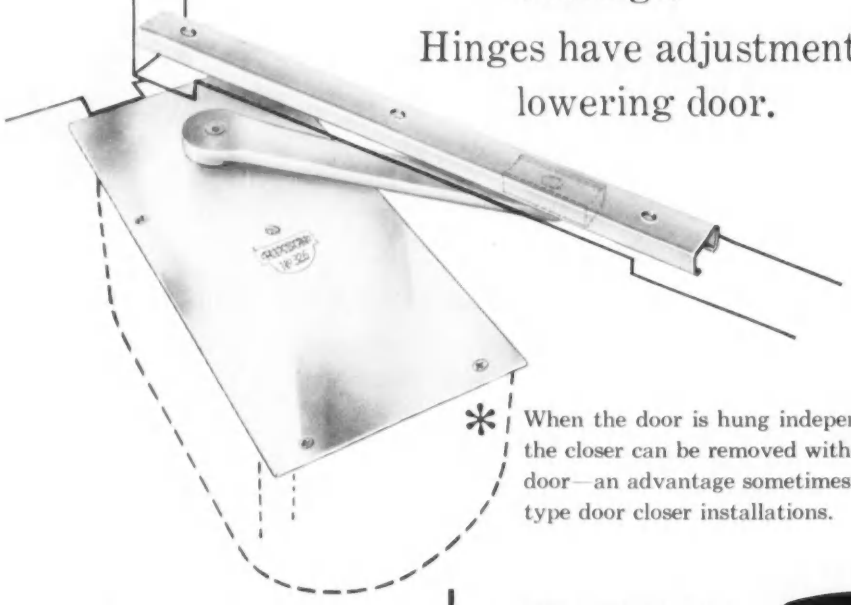

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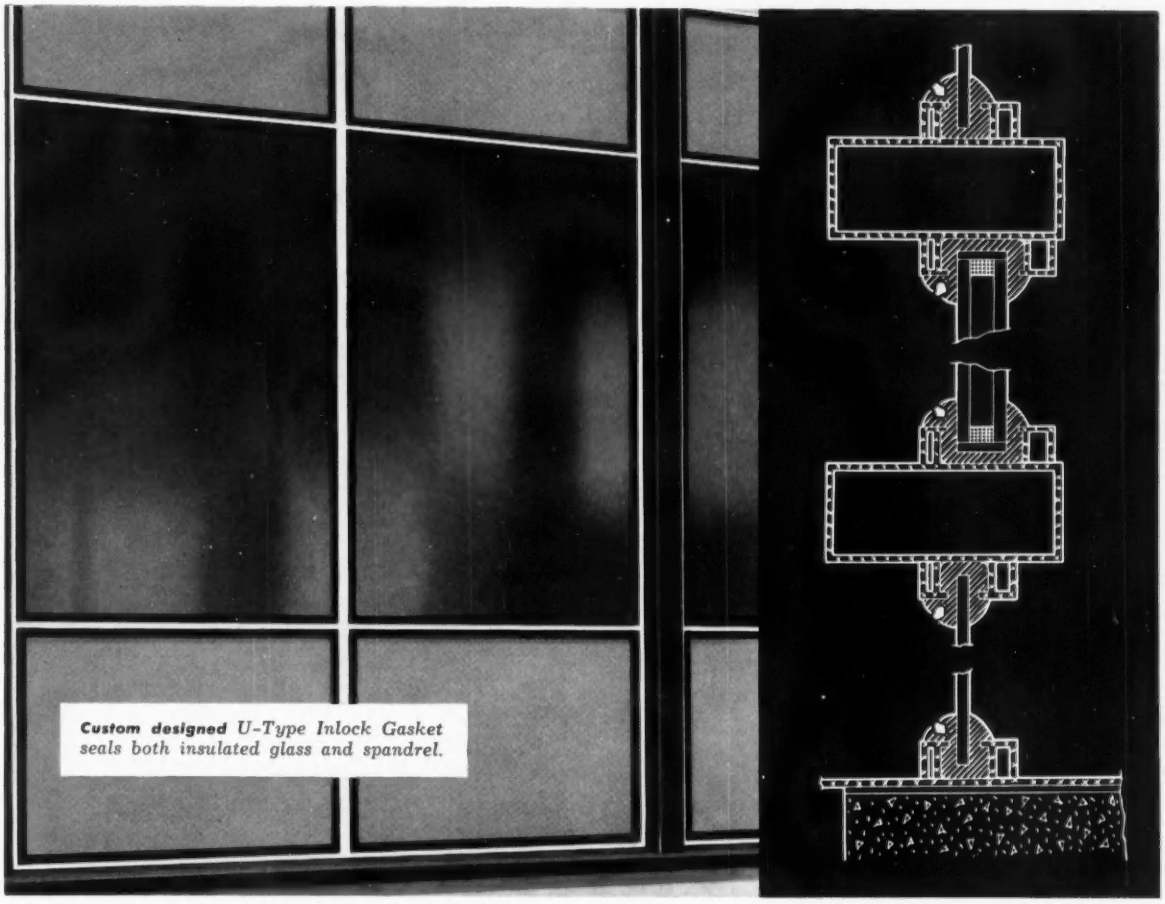

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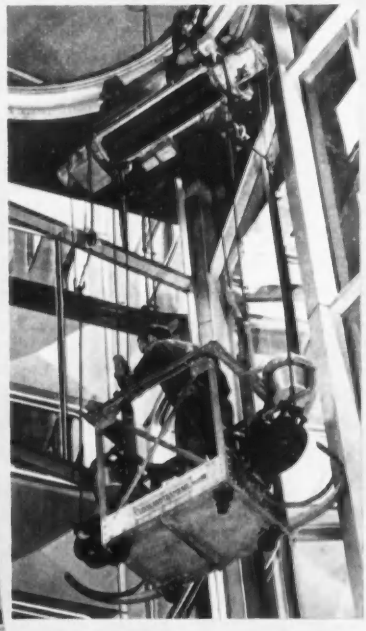

Washing windows on the inside of the lobby. The same cage is used both outside and inside.

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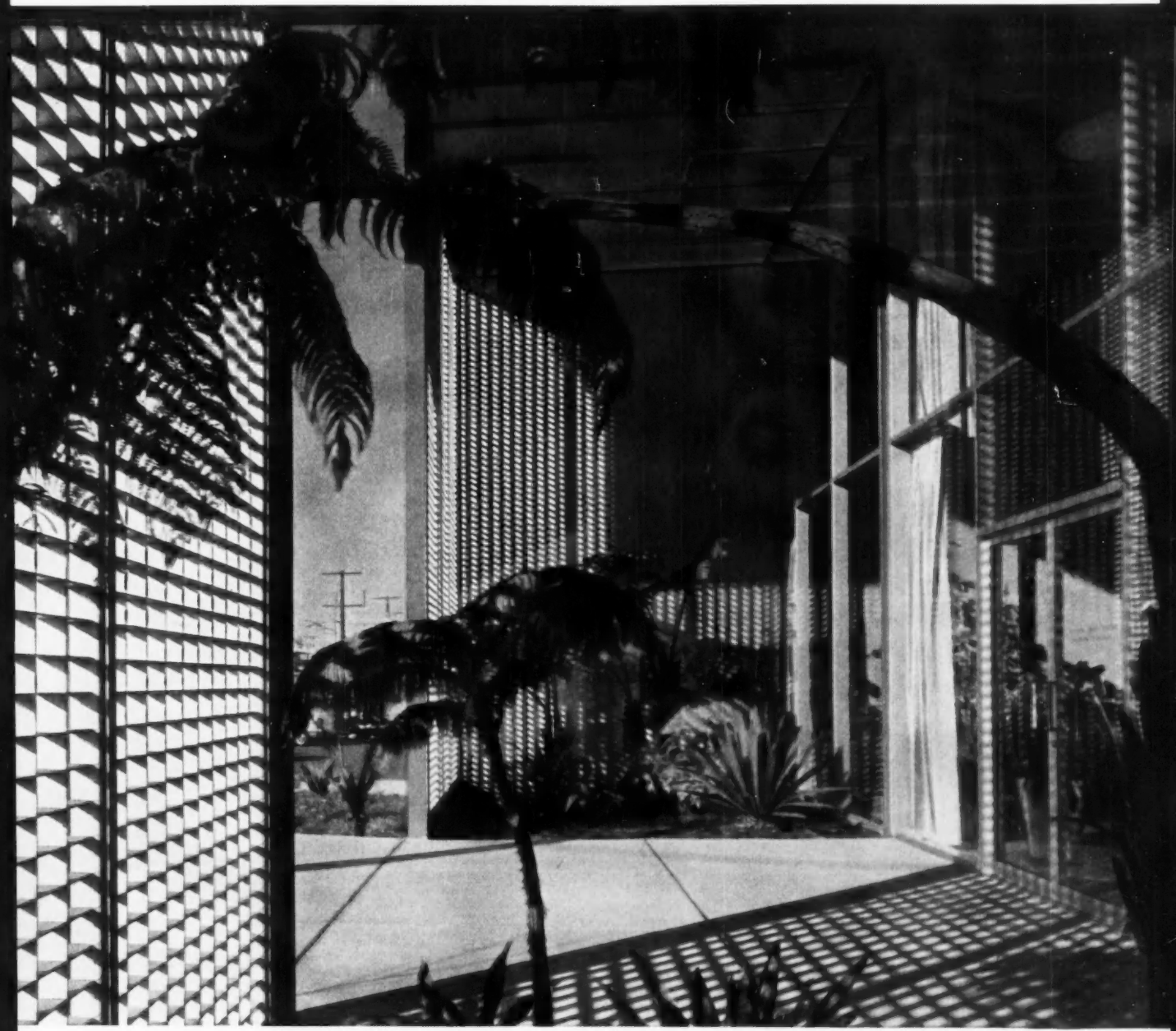

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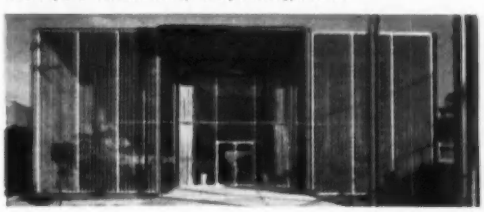

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Engineer: James McDade, Texas Instruments, Inc.

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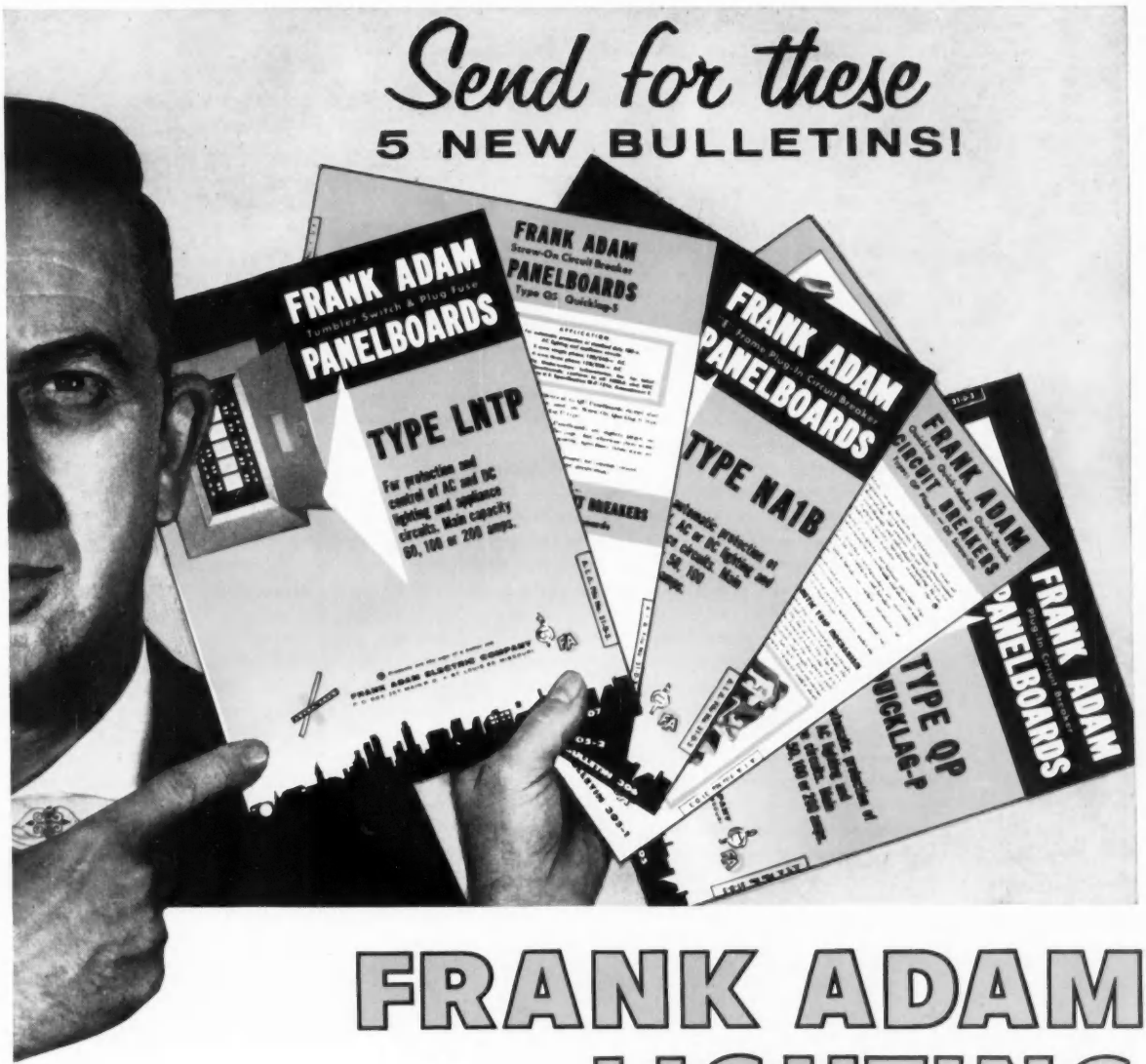

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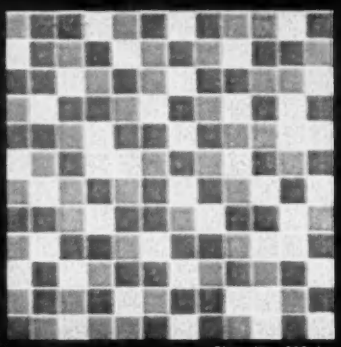

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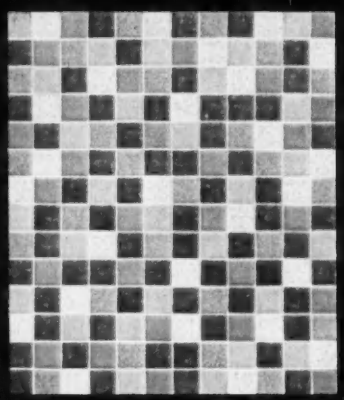

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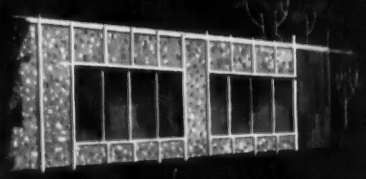

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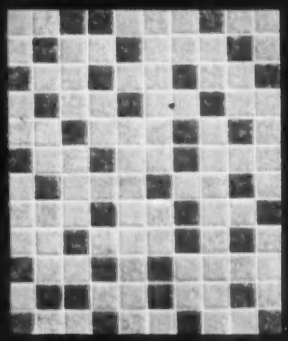

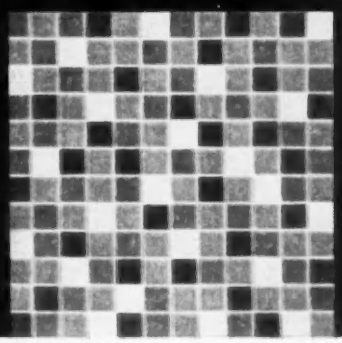

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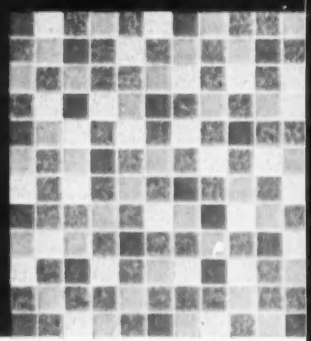

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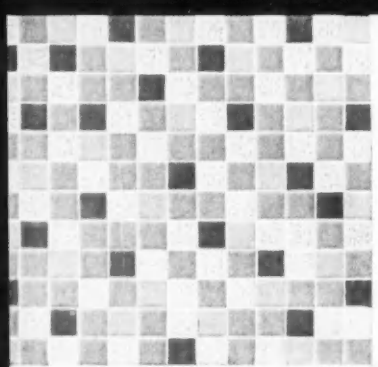

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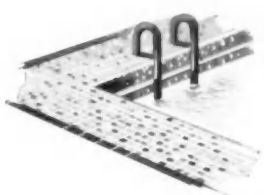

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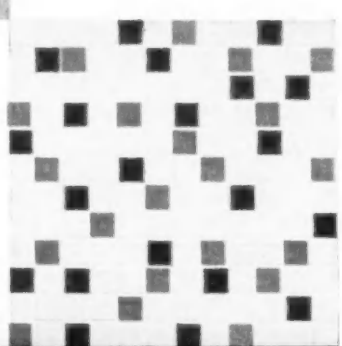
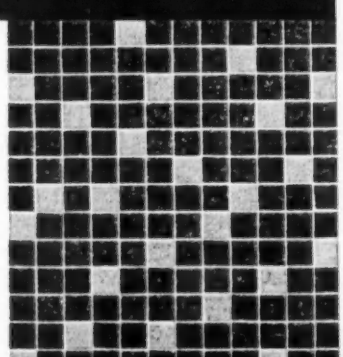


Plate No. 012-7



To simplify selection and speed delivery of random pattern ceramic mosaics, Romany•Spartan offers eight handsome standard mixtures of color and texture, for use on floors, walls and ceilings, indoors and out. Taking advantage of low-cost thin-bed setting methods, these 13⅛" x 26¼" sheets—with "Quickset" perforated backing or conventional mounting—bring new economy to a myriad of architectural uses. For more information write for our full color "Designers' Portfolio" or contact your nearby Romany•Spartan sales representative. United States Ceramic Tile Company, Dept. R-33, Canton 2, Ohio.

ROMANY SPARTAN

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UNITED STATES CERAMIC TILE COMPANY
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MEMBERS: Tile Council of America and The Producers' Council, Inc.

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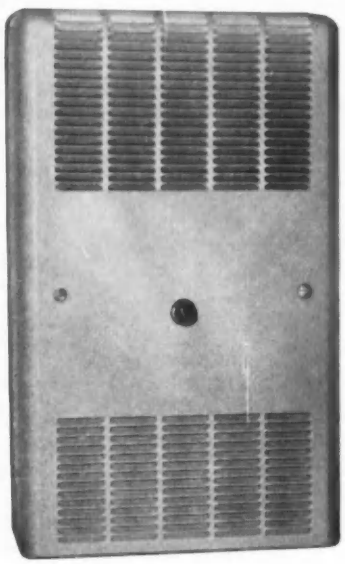
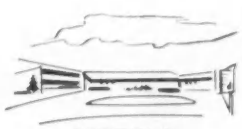
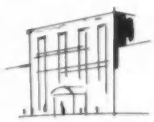
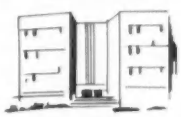




MOTELS



HOTELS



APARTMENTS

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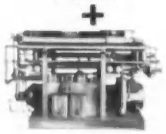

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(WHERE WATER USAGE IS LIMITED)

Where there's a need, there's a Dunham-Bush product!

The new "CHC" Cooling-Heating Conditioner continues the Dunham-Bush pattern of product progress providing "one-source-one responsibility" for all your air conditioning, heating, refrigeration and heat transfer needs.

"CHC" is a compact fan coil unit for mounting between-the-studs of a wall structure, designed to meet the smaller space and capacity requirements of motels, hotels, apartments and residences. Together with Heat-X Package Water Chillers, Dunham-Bush Pumps, and Water Savers, all the necessary equipment to meet complete specifications are provided.

Dunham-Bush "CHC" units are available in two basic sizes—Model CHC-150 and CHC-300. The standard unit is basically designed for free standing use readily adaptable for semi-recessed applications. Each standard unit can be wall mounted, fully exposed or semi-recessed, as required for "off the floor" installations. Matching trim pieces are available for finishing purposes on semi-recessed applications.

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Keep up-to-date on the latest! Write for complete "CHC" specifications or call your Dunham-Bush sales engineer.

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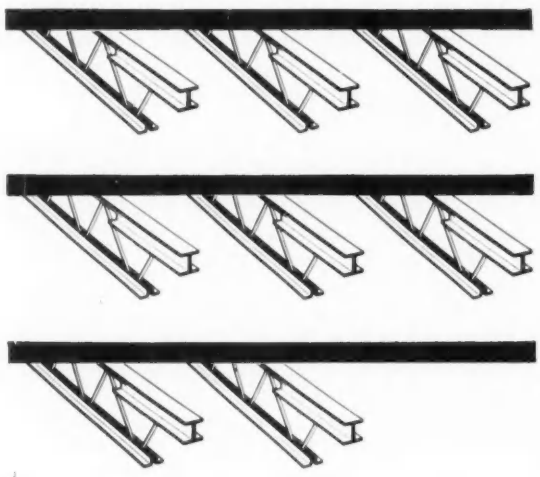

SJI adds 8 more types to RECOMMENDED SERIES "S" JOISTS

Types of Series "S" open web steel joists recommended by the Steel Joist Institute have been increased from 17 to 25. This wider range of selection provides several important added advantages, such as greater flexibility and a more exact application of open web steel joists for given structural loads.

The SJI members are now offering all types of "S" Series joists based upon 20,000 psi working stress, and the SJI has published new combined specifications and load tables as a handy reference for the designing architect and engineer.

These new developments by the Steel Joist Institute give added assurance that you can specify with confidence when using steel joists produced in accordance with the standards and specifications of the Steel Joist Institute.

Send coupon for free copy of combined specifications and load tables.

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Please send me a copy of your new Standard Specifications and Load Tables.

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Unique Decorative Color Effects

. . . new Decor-A-Lite* by Miller

Here's a fluorescent fixture that gives lighting an exciting new role in interior design — yet *holds-the-ceiling* on installation and maintenance costs! Decor-A-Lite is a modular, surface type fixture with slim, contemporary lines. Easily installed, singly or in multiple patterns — it brings a customized, recessed effect to *on-the-ceiling* lighting for Stores, Offices, Schools, and Public Buildings.

Unique, new decorative effects are easily attainable with Decor-A-Lite. Side panel lancings emit White or colored light (a choice of Peach, Green, or Gold) which can be changed as desired. And yet the color of the room lighting remains undistorted.

Decor-A-Lite comes in 1′ x 4′, 2′ x 2′, and 2′ x 4′ sizes. A choice of four bottom closures allows broad flexibility of lighting design and application.

Discover today how Decor-A-Lite can meet your specific lighting design and installation needs. Write Dept. 359, The Miller Company, Meriden, Conn. for full catalog information.

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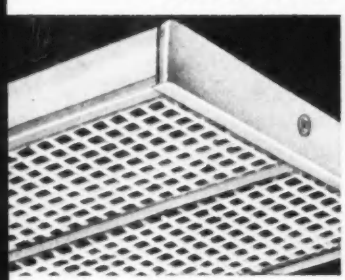
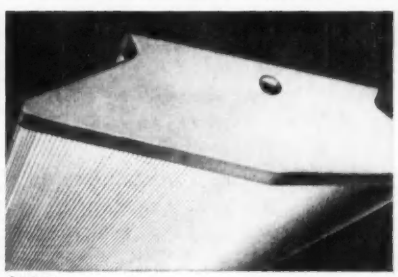
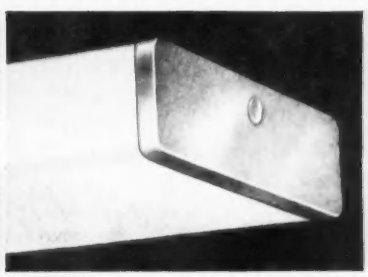
Decor-A-Lite is the newest addition to this popular priced line of fluorescent fixtures for Commercial use.



MERCHANT



SABRE



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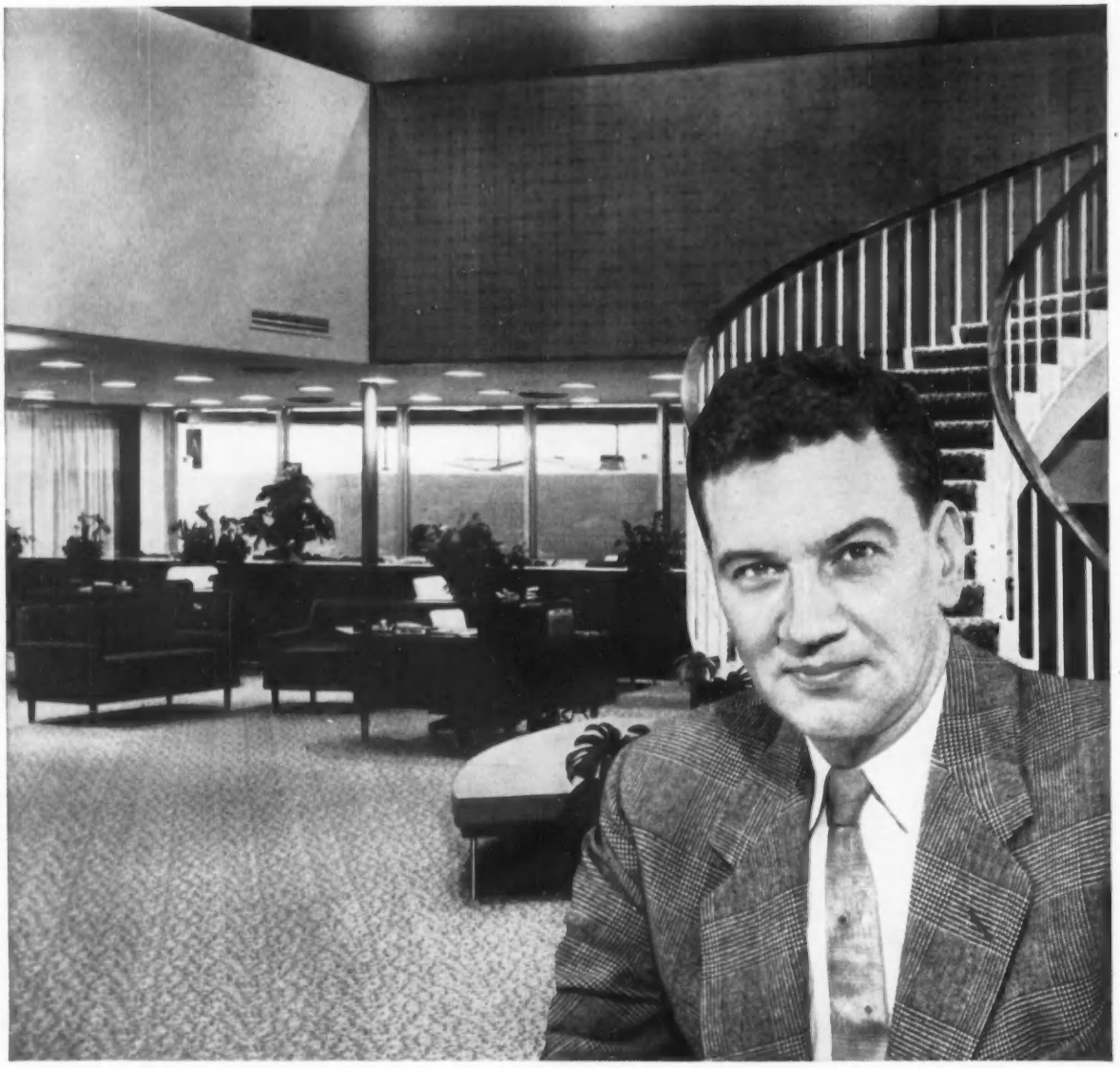
Contact Your Miller Representative for a Demonstration

In the long run...beautiful Gulistan Carpet costs less than hard floor coverings!



"Hushed and handsome with wall-to-wall Gulistan! That's the way we like it," says Robert T. Souter, Executive Vice President of World Savings and Loan Association, Lynwood, Calif. Custom carpet by Gulistan Design Dept. Installed by L. G. Powers Floor Covering Co.

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Write: Commercial Department AR-4, A. & M. Karagheusian, Inc., 295 Fifth Avenue, New York 16, N. Y.

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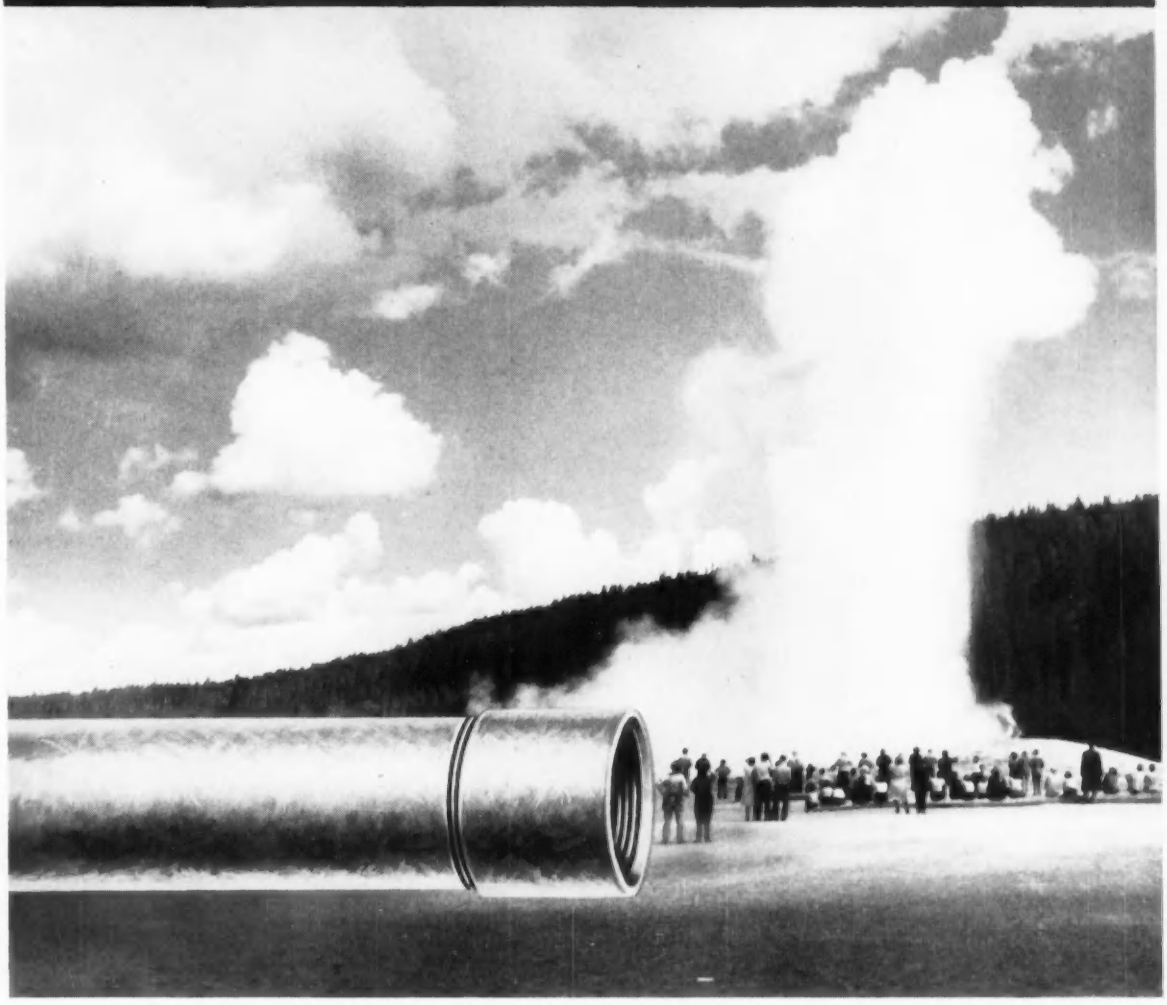

Dependable as "Old Faithful"

— that's what they've said about Wheeling Steel Pipe for decades. For this long-lasting pipe has the dimensional stability and inherent strength needed for all types of jobs.

What's more, Wheeling service and Wheeling Pipe are better than ever! For Wheeling has just completed a $5½-million program to expand and improve its pipe making, warehousing and shipping facilities.

Don't be fooled by "cost comparisons" between strong, dependable Wheeling Steel Pipe and pipe with thin walls. Always specify strong, long-lived Wheeling Steel Pipe — it's "Old Faithful." Wheeling Steel Corporation, Wheeling, W. Va.

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ANOTHER L. E. CARPENTER

Carrier announces new Fan-coil Room Weathermakers

for commercial, industrial and residential buildings

These new Carrier 36T Fan-coil Room Weathermakers* have been added to a line that was already the finest in the air conditioning field. Designed to work with a boiler-chiller source of heating and cooling, they operate independently to provide the exact indoor weather desired for each room year around—regardless of requirements in other rooms or outdoor climate.

Engineered for use both in new and old buildings, these new Carrier units may be readily adapted to a wide variety of installation conditions. Available in three styles for free standing or recessed applications. Each style in four basic sizes—200 cfm, 300 cfm, 400 cfm and 560 cfm. Left or right hand piping arrangements, with electrical connections always provided at the opposite end.

A new, illustrated 16-page catalog, 36T-73, gives capacity tables, cooling curves, heating curves and other essential data about these new Fan-coil Room Weathermakers. For your copy, call your nearest Carrier dealer. He's listed in the Yellow Pages of your Classified Telephone Directory. Remember, you can air condition any building the best way with Carrier. Carrier Corporation, Syracuse, New York.

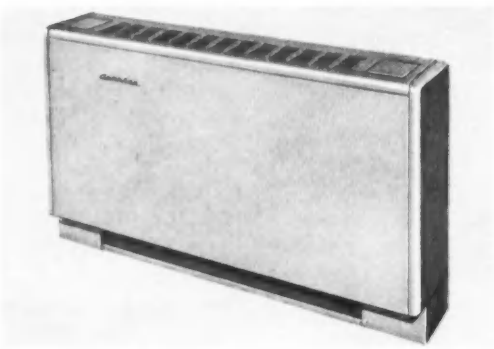
* Reg. U. S. Pat. Off.

MORE PROOF OF
BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

36T-204: Designed for flexible built-in applications, this style comes with the same variety of air damper options as cabinet style units. Can be supplied complete with standard control package options. Another model, 36T-304, is engineered for recirculating air operation only.

36T-104: Slim, attractive free-standing Weathermakers fit any room setting. Available for completely recirculating, 25% or 100% outside air operation, they feature a top discharge grille as standard equipment. An optional cabinet with front discharge grille may also be ordered.



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VICRTEX DESIGN

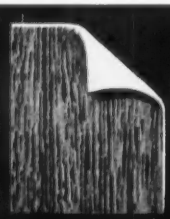
WISHFUL WOODPECKER! Thought this was **real** mahogany veneer.

Distant perspective: uncanny realism. Close-up consensus: it's magic!

HONDURA

the newest imaginative original of

VICRTEX V.E.F.* VINYL WALLCOVERINGS



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In 12 decorator colors. Write today for swatches and prices.

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FAST, AUTOMATIC OPENING and closing speeds all cold storage room traffic

SAVES REFRIGERATION. *Electroglide eliminates costly loss of refrigeration with fast opening and closing.*

CONVENIENT, SIMPLE OPERATION *saves time and effort for personnel, increases plant efficiency.*

Jamison *ELECTROGLIDE** features save time and labor... speed warehouse operations

• Jamison's new Electroglide Door is now in operation in a wide variety of installations throughout the country and is proving in actual service that it will deliver extra savings and economy:

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Level ride—no gasket drag • No shock closure • Reduction gear enclosed, sealed in oil • Frostop prevents icing, saves gaskets

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Full height safety door edge, sensitive full travel of door • Rear emergency release • Emergency controls for manual operation

Greater Economy

Minimum loss of refrigeration • Camlok compression seal for positive gasket contact • Faster operation, increased volume

See for yourself how Electroglide can increase the efficiency of your own operations. Write today for interesting booklet to Jamison Cold Storage Door Co., Hagerstown, Md.

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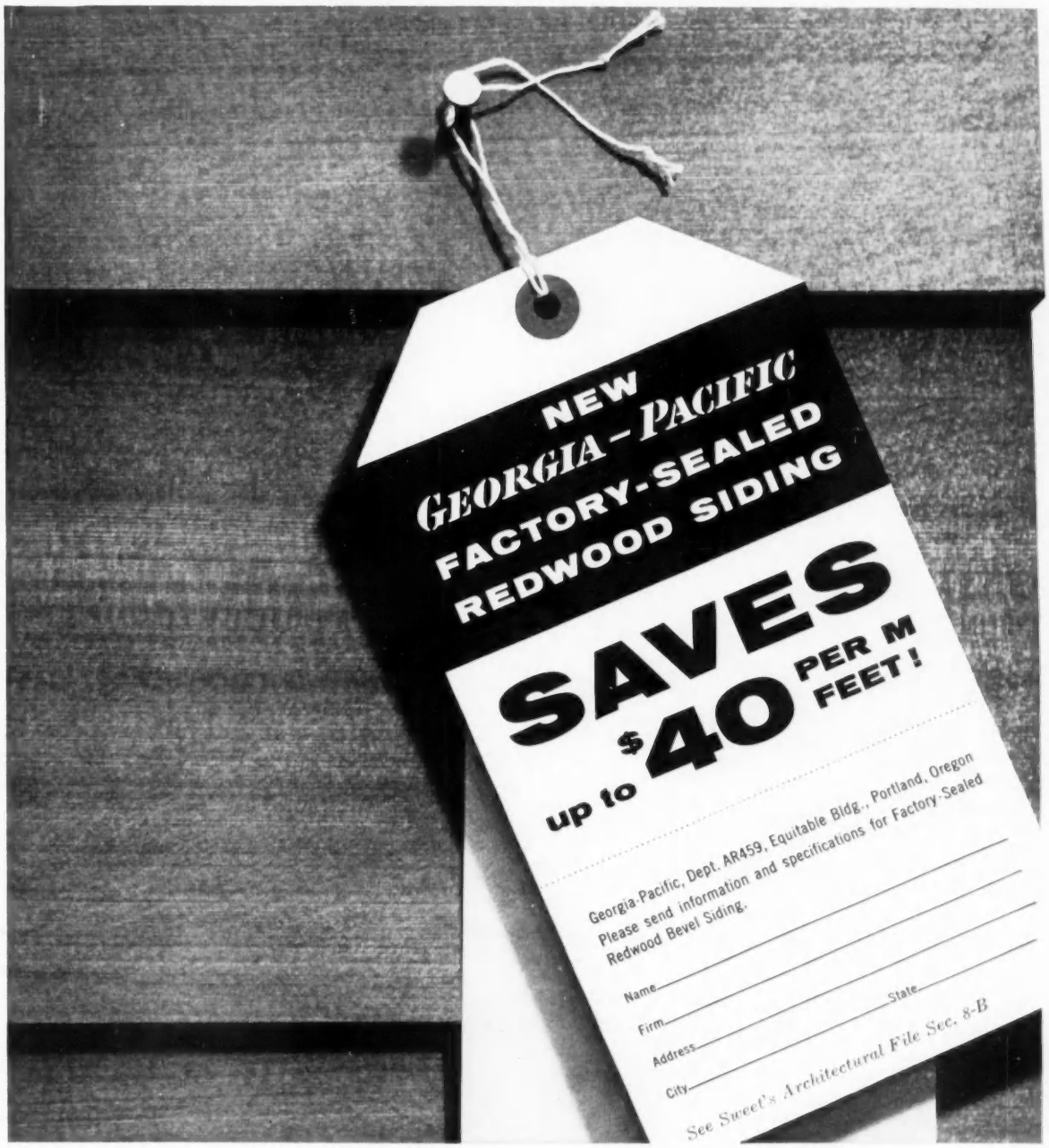
JAMISON

COLD STORAGE DOORS

Cut paint costs, damage loss GP REDWOOD FACTORY-SEALED BEVEL SIDING GEORGIA-PACIFIC *with new Georgia-Pacific Factory-Sealed Bevel Siding. G-P immersion-sealing process eliminates on-the-job priming—saves up to $40. per M feet!* GP REDWOOD FACTORY-SEALED BEVEL SIDING GEORGIA-PACIFIC *Paint or stain finish-coats flow on faster, cover better, last longer. New plastic-coated, heat-sealed package* GP REDWOOD FACTORY-SEALED BEVEL SIDING GEORGIA-PACIFIC *cuts handling time and damage loss!*



"Most durable umbrella a store ever had"

said the contractor about the Revere Copper Roof on

McInerny's Waikiki

on the grounds of the Royal Hawaiian Hotel, Honolulu, Hawaii

35,000 lbs. of Revere Cold Rolled 16 oz. Copper applied by Oahu Plumbing & Sheet Metal, Ltd.

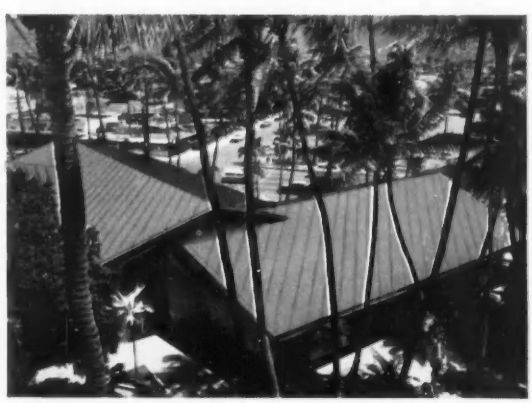
"As far as we know, this is the only specialty store of men's women's and children's apparel and accessories in the world with an all-copper roof," continued Mr. Francis F. Sen, President of Oahu Plumbing & Sheet Metal, Ltd. The roof is the batten seam type with the roof pans being prefabricated in our shop. The installation was made in accordance with recommendations made by Revere in their booklet, 'Copper and Common Sense.'

"Because of its exceptional flexibility in design we notice that more and more all-copper roofs are being specified by architects and designers who are seeking something different.

"This pleases us because we prefer to work with copper. It is easily soldered, and can be readily fabricated into any desired shape or form. You can do such a neat-looking job with copper."

Architects, designers, engineers: Dare to design with copper in mind. Be the leader others will follow. Send today for Revere's 110-page brochure, "Copper and Common Sense."

ENTRANCE TO THE fabulous McInerny Waikiki Store. Known as "The Jewel of the Pacific," it is one of the show places of the world, and is in Honolulu, Hawaii. Note how copper gutters blend into roof line; also unique treatment of down spouts (arrows).



MOST UNUSUAL ROOF EFFECT is obtained by running batten seams on the diagonal. Copper was furnished by Revere Copper and Brass Incorporated. Architect: VLADIMIR OSSIPOFF, F.A.I.A.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

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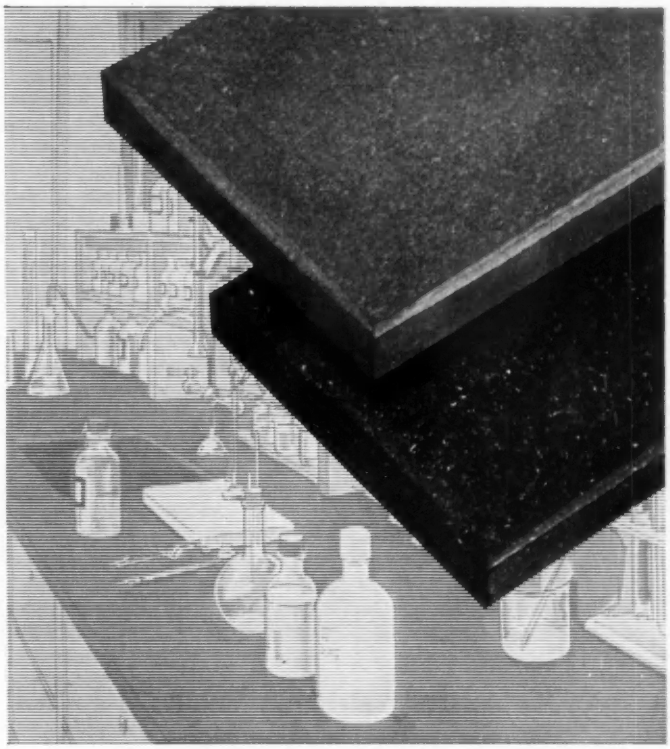
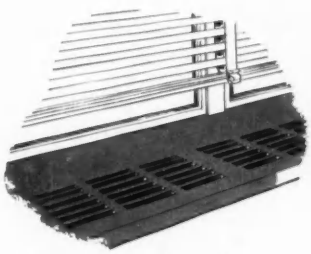
Now–

a touch of beauty that wears like stone

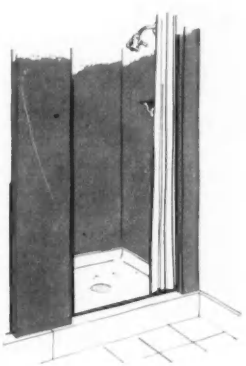
on many hard-working surfaces





Window sills of Colorlith are pleasing to the eye...won't warp under prolonged heat or moisture.

Colorlith gives washroom wainscots a bright new lift. Stays attractive... resists moisture, chipping, abuse.



Ideal for shower stalls... strong, rigid Colorlith can't warp, rust, rot or corrode.

J-M COLORLITH® ...handsome, tough, colorful

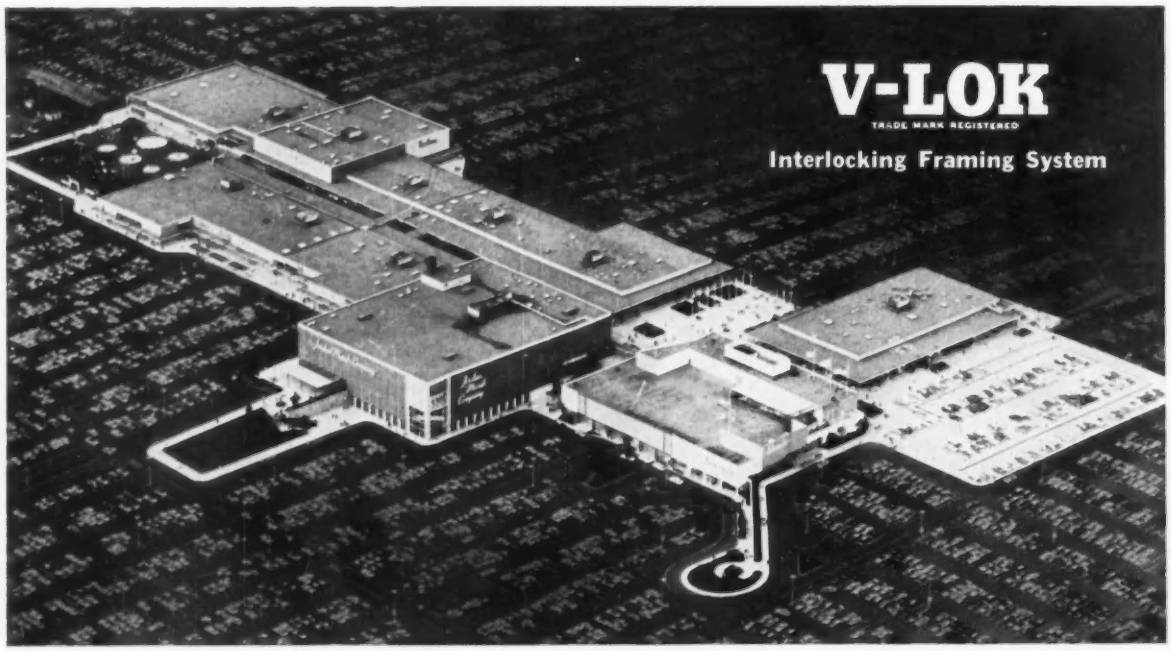
Created as an attractive, lower cost material for laboratory table tops, Colorlith has now gained wide acceptance as a surfacing material in many busy interior areas.

Fabricated from asbestos fiber, portland cement and chemically resistant colorings, this inorganic material resists heat, flame, moisture, even acids and solvents in normal working concentrations, when properly coated with a clear lacquer or equivalent. Color runs all the way through the sheet. Thicknesses from $1\frac{1}{4}$″ down to $\frac{1}{4}$″ can be used without breaking.

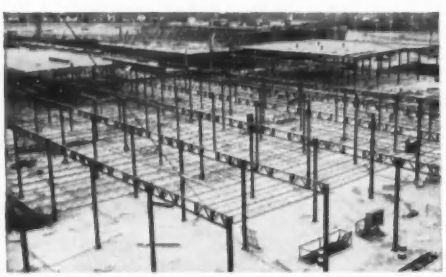
Write for Colorlith specification sheet EL-94A and brochure EL-62A. Johns-Manville, Box 14, New York 16, New York. In Canada, Port Credit, Ontario.

JOHNS MANVILLE JM PRODUCTS

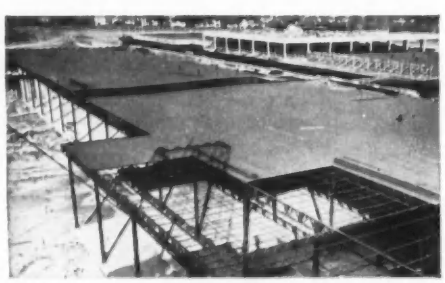
JOHNS-MANVILLE



More than one thousand tons of Macomber steel frame the world's largest shopping center



As erection of V-LOK steel framing progressed, completed areas were covered with Macomber Roof Deck.



With roof deck in place, interior work started immediately and could continue regardless of snow or rain.

Allied Stores Corporation's Northshore Shopping Center at Peabody, Mass., with 1,070,000 square feet of area, is presently the largest in the world. Steel work includes approximately 850 tons of Macomber V-LOK interlocking framing and about 150 tons of Macomber structural steel — plus approximately 900,000 suare feet of Macomber roof deck.

Macomber steel deliveries complied with tight construction schedules, causing no delays. The building was completed September 12, 1958—months sooner than possible without V-LOK, the framing method that eliminates practically all on-the-job riveting, welding or bolting.

ARCHITECTS-ENGINEERS
John Graham and Company, Seattle and New York

CONTRACTOR
John A. Volpe Construction Co., Malden, Mass., Washington, D. C.

STEEL ERECTORS
Daniel Marr & Son Co., Boston, Mass.
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Write for your copy of the V-LOK Design Manual

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CANTON 1, OHIO

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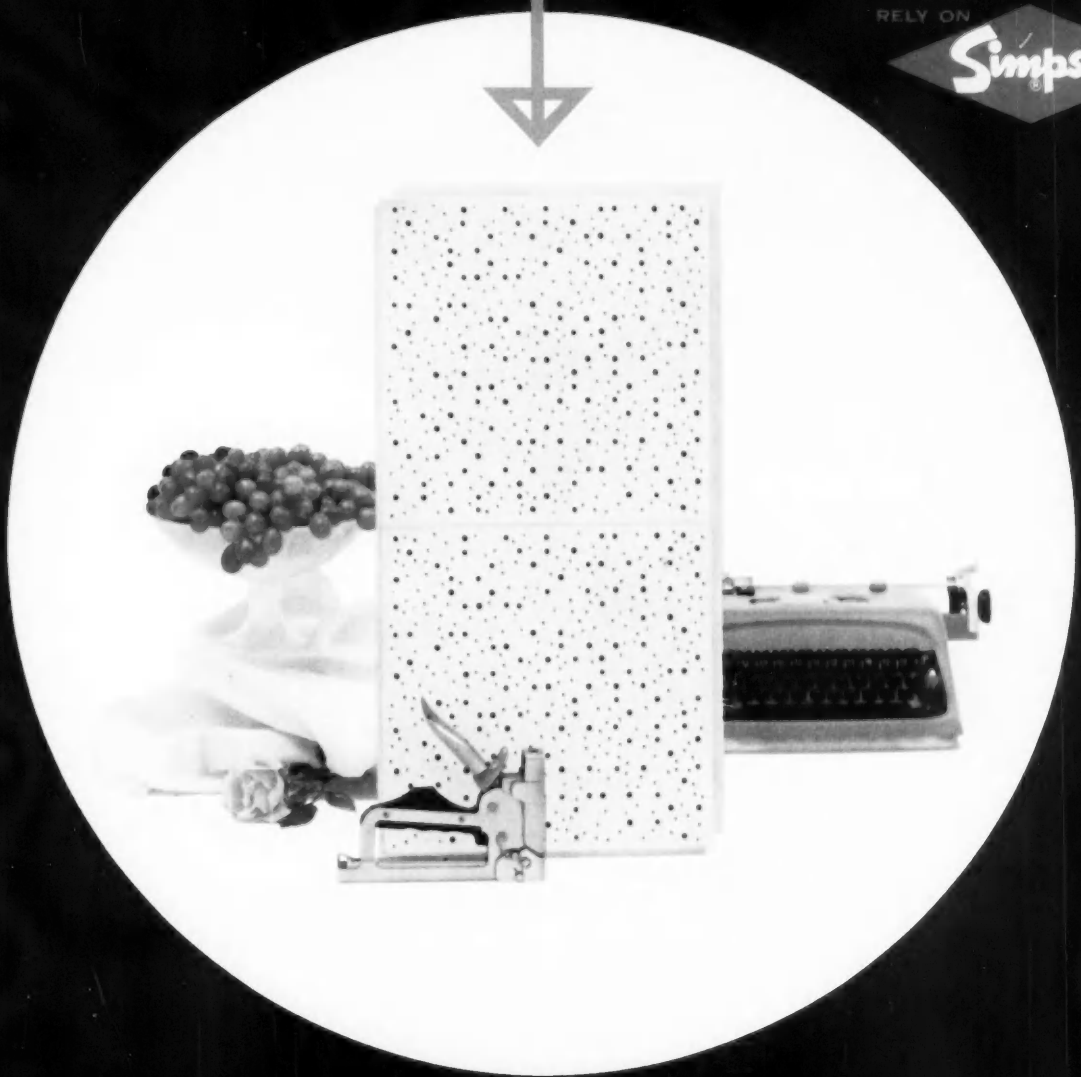

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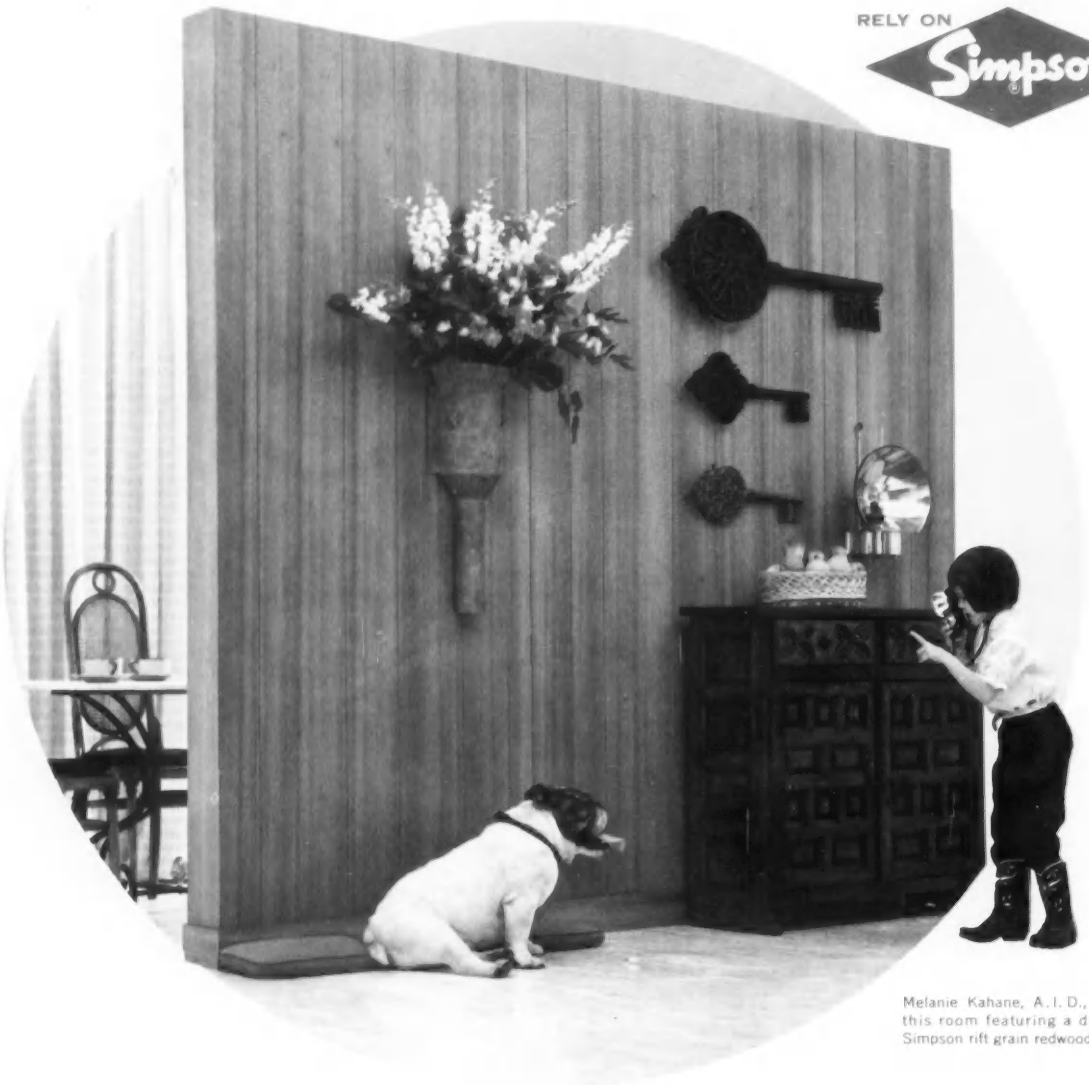

Melanie Kahane, A. I. D., designed this room featuring a divider of Simpson rift grain redwood plywood.

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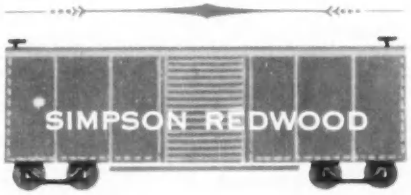

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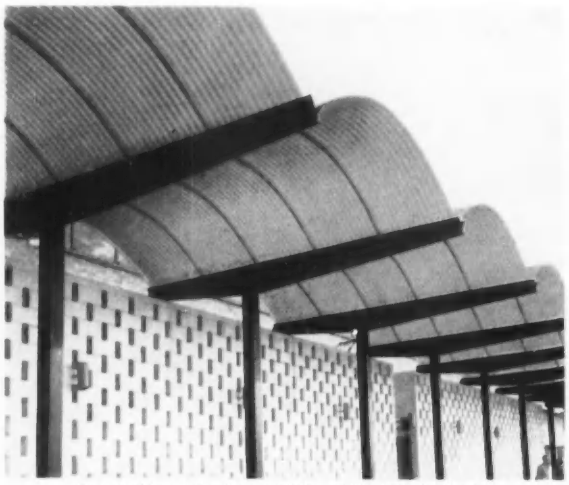
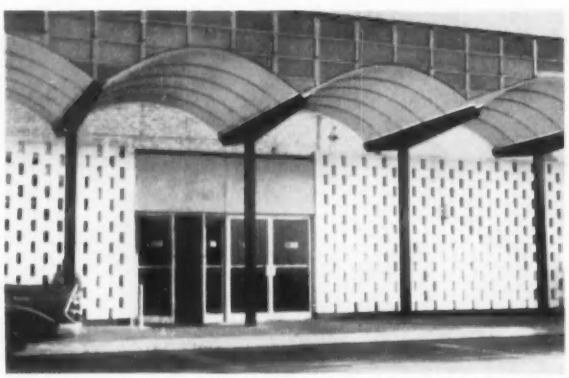


Canopy of Structoglas filters sunlight, quickly channels off rain.
ARCHITECT: YAMASAKI, LEINWEBER & ASSOCIATES

CANOPY OF LIGHT



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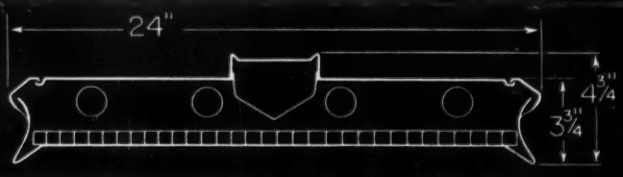

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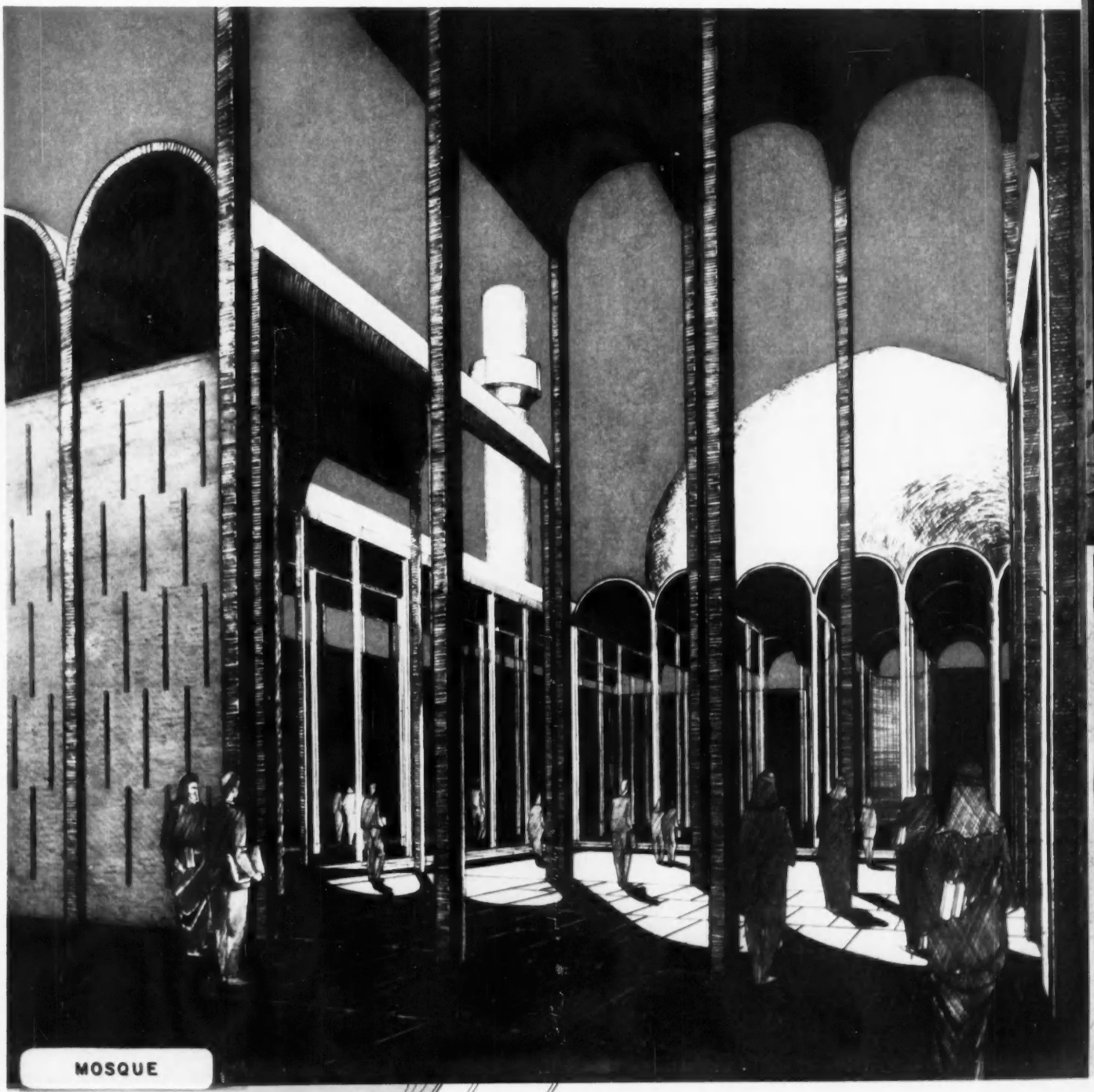
TAC: *The Architects Collaborative*

1. The University of Baghdad



TAC: *University of Baghdad. Walter Gropius, Robert S. McMillan, H. Morse Payne Jr. in charge*

Jean B. Fletcher
Norman Fletcher
Walter Gropius
John C. Harkness
Sarah P. Harkness
Robert S. McMillan
Louis A. McMillen
Benjamin Thompson

Richard Brooker
Herbert Gallagher
Witold v. Henneberg
H. Morse Payne Jr.

The commission to design the new University of Baghdad has offered the unique opportunity to plan a total University for 12,000 students as a consistent entity in both its physical plant on new land as well as its philosophy of education. The educational advisers were Professor Cyril G. Sargent, Harvard University; Mr. Donald P. Mitchell, formerly of Harvard University; and Professor Keyes Metcalf, Emeritus, Harvard College, Widener Library.

Particular stress has been laid throughout this study on the greatest possible flexibility of the organizational system as well as of the physical plant itself. For the basic concept has been the balance of unity and diversity, of integration and differentiation in order to provide for the students the intellectual and emotional experience from both East and West.

The identity of the various Colleges which have been developed in the past has been retained by establishing for each of them separate permanent headquarters and teachers' offices. The distribution and use of instructional spaces however—class rooms, laboratories and library facilities—will be scheduled flexibly by the central University administration according to the varying needs of the entire University.

Site

Beside the Tigris shore line, several rows of irregularly zigzagging dikes—about 10 feet high—offer a significant feature of the otherwise completely flat site. They run into a series of terraces around the main plaza, providing views of the surrounding buildings from different levels. All the teaching and administrative facilities are placed around this central plaza.

Climate

A major problem is to counteract the excessive heat from May to September, often considerably higher than our blood temperature. Not only are all the buildings air conditioned throughout (Jaros, Baum and Bolles, New York, Consulting Engineers), but they are put close enough to overshadow each other, providing simultaneously a reduction in temperature as well as short horizontal lines of communication. They are all placed around patios of various sizes which are filled with plants, water basins and fountains. The roof surfaces are cooled by sprinklers.

Materials, Building Techniques and Architecture

Sand, cement and bricks are locally available and inexpensive. Structural parts—foundations, columns, floors and roofs—will be of reinforced concrete, walls of bricks or cinder blocks. Some shell constructions—vaults and domes—will give dramatic accents in the silhouette. All exterior surfaces throughout will be painted white, only here and there interrupted by glazed tile walls in strong solid coloration to give direction and orientation. Cantilevered roofs—and floor slabs—and vertical screens of bricks or concrete frames give shade to the exterior walls.

The interrelationship of the individual buildings and the landscaped open spaces with their water fountains between them, as well as the shadow effects from the strong sunlight obtained by cantilevers and undercuts, will cause a significant rhythm. This rhythm tends to express the meaning of Universitas, which is "wholeness," offering the creative setting for a full, well-integrated life of the students.

The scheme has been accepted by the Ministry of Development in Baghdad with some additions and changes. The Prime Minister of Iraq has given priority for execution of the project.

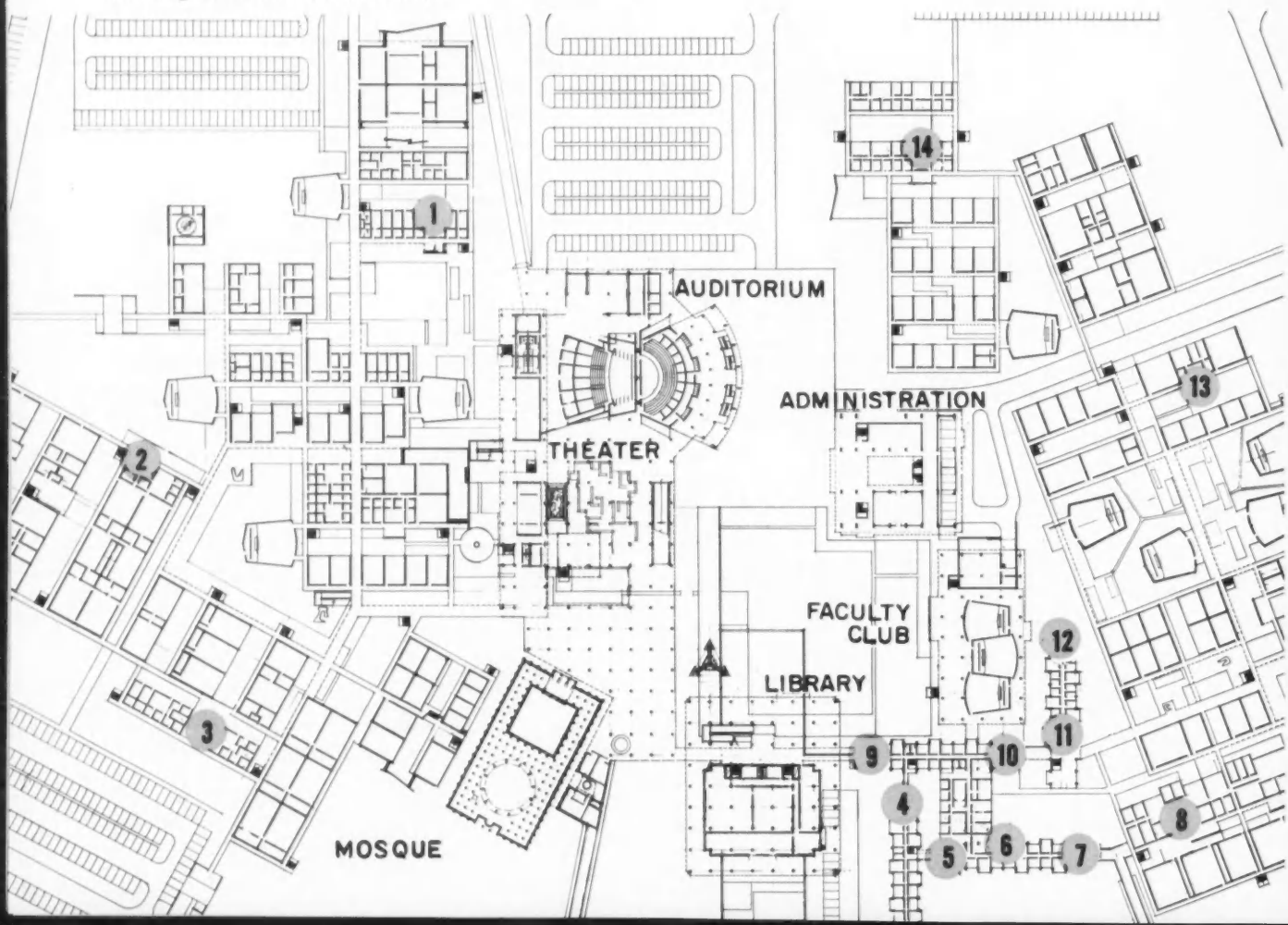
WALTER GROPIUS

1. 2. 3.

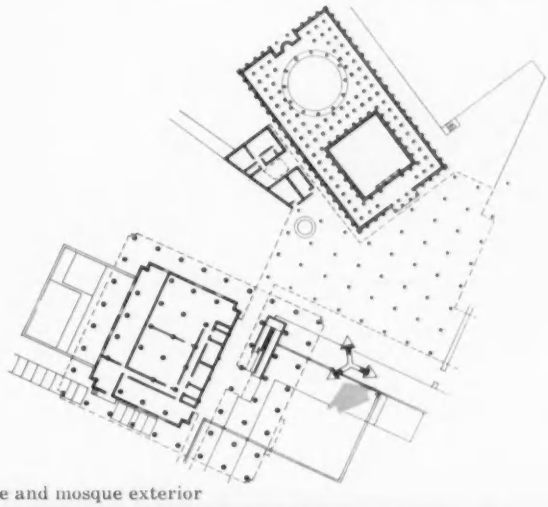
The three building groups above which typify TAC planning can be considered prototypes of the Baghdad scheme. In each, the building elements are related to each other asymmetrically in a way which creates great spatial variety and complexity. 1. Harvard Graduate Center, Cambridge, Mass. 2. School designed for *Collier's* magazine. 3. Hua Tung University Project for Shanghai, China

The site on the shore of the Tigris River is flat except for existing 10-ft high dikes indicated on plan by heavy irregular lines. These contribute a change of level within the campus. Two large groves of palm and fruit trees (not shown) determined the location of the central building complex. 1. Campus Center 2. Teaching Space 3. Student Residential Groups 4. Individual Housing 5. Sport Facilities 6. Elementary School 7. Infirmary 8. Service Facilities 9. Entry 10. Shopping Center

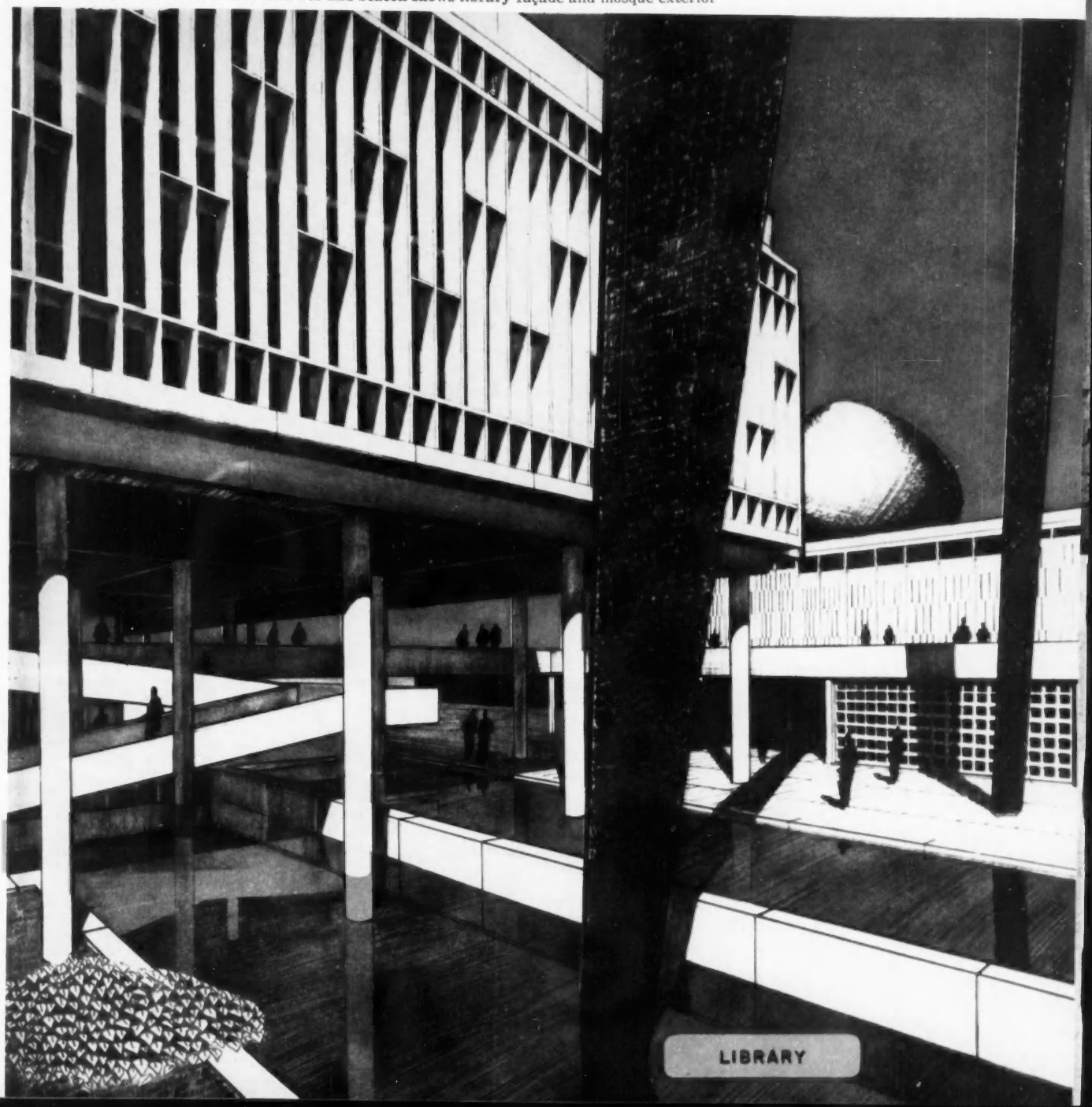
Permanent headquarters of the various colleges and of the departments within them are indicated by numbered circles. Colleges are not separate building entities, however, with their own classrooms, laboratories and library facilities. These spaces will be part of the university proper and will be scheduled for use in relation to the expanding or contracting needs of each college or department. Headquarters of the departments within the College of Arts and Sciences are indicated on the plan as follows: 1. Mathematics, Astronomy 2. Physics 3. Chemistry 4. History, Archaeology, Geography 5. Anthropology 6. Psychology 9. Languages 11. Philosophy, Sociology 13. Biology, Botany 14. Geology. Headquarters of Colleges with a less complex departmental structure appear on the plan as follows: 7. College of Education 8. College of Engineering, Planning and Architecture 10. College of Law 12. College of Business and Economics



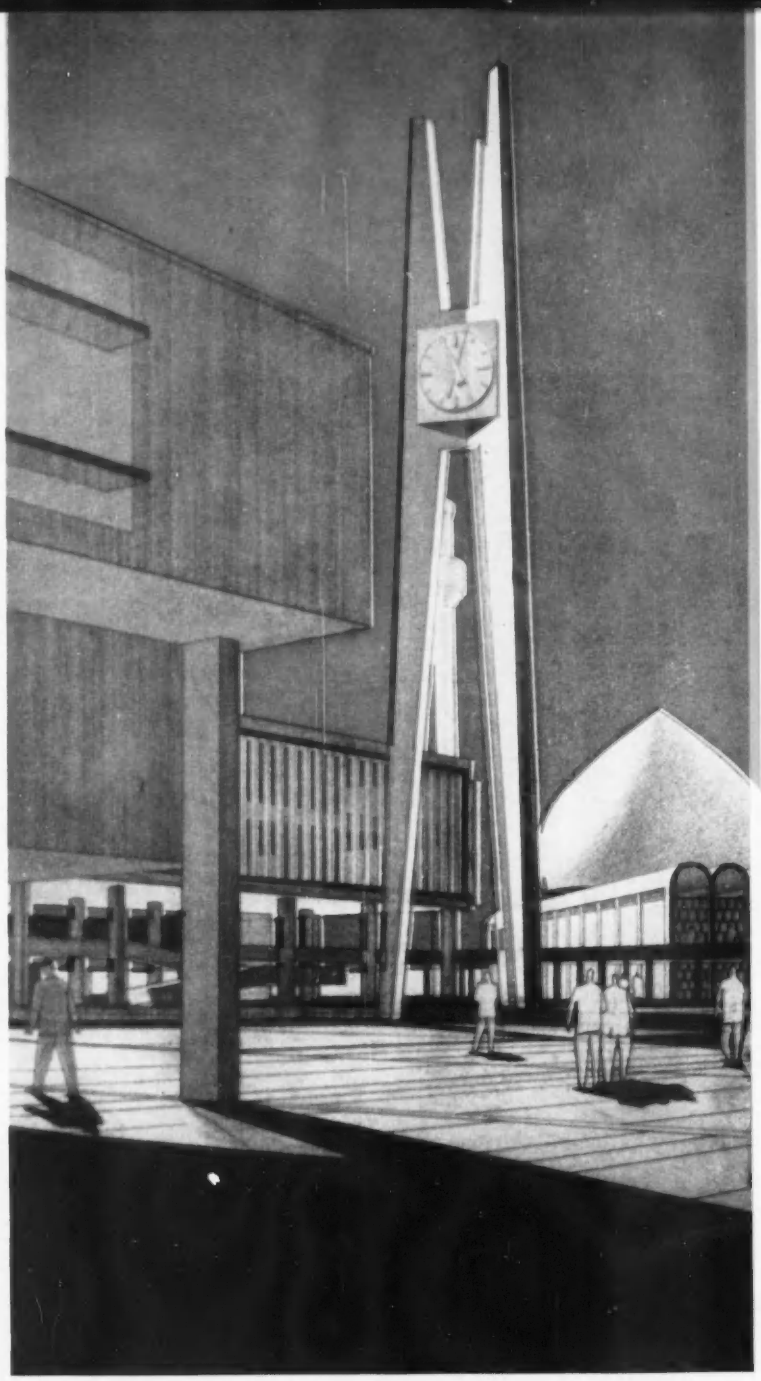
TAC: *University of Baghdad*



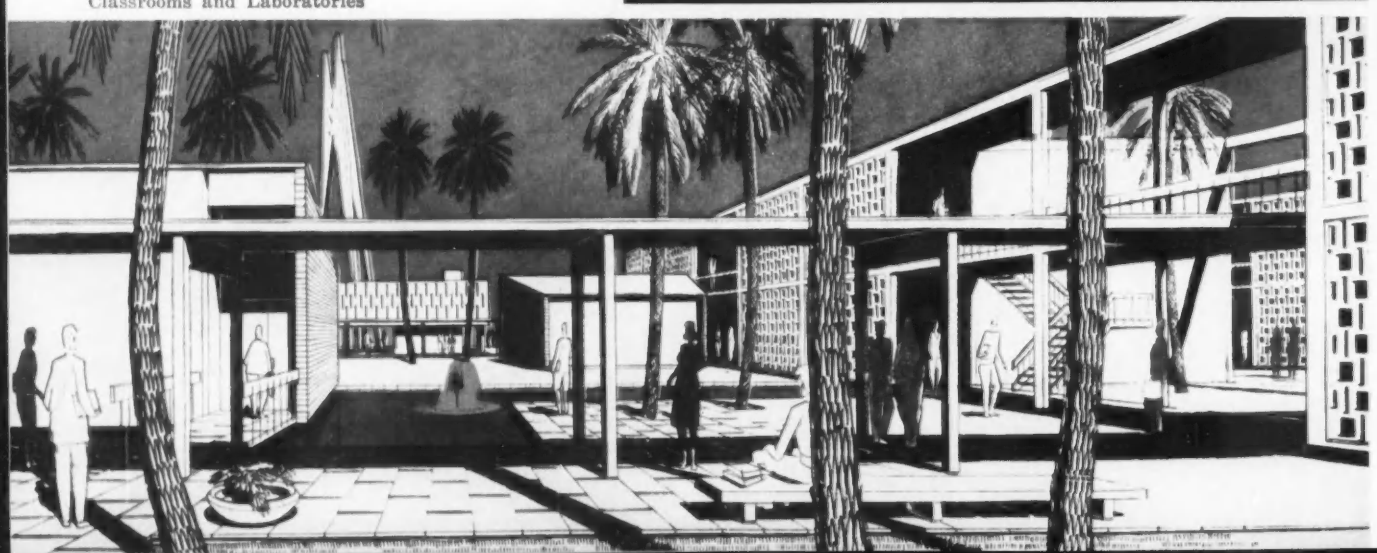
View at base of vertical clocktower and beacon shows library façade and mosque exterior



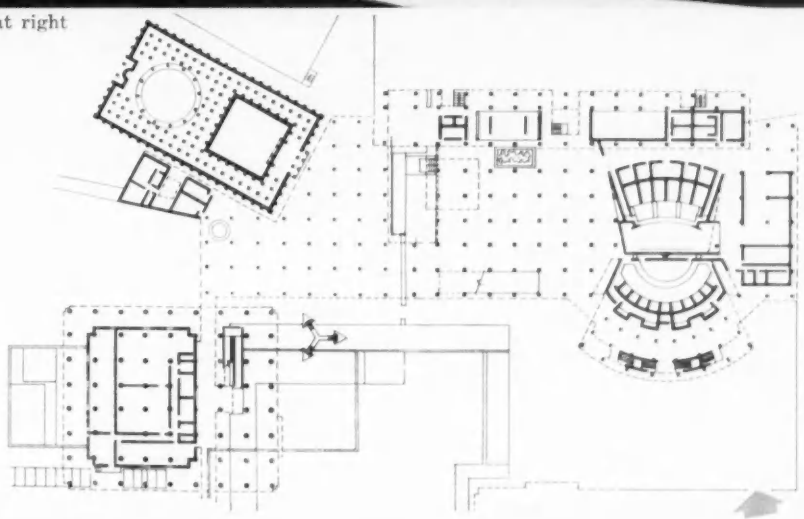
TAC: *University of Baghdad*



Classrooms and Laboratories



Plaza: Mosque in distance, Auditorium at right



Typical dormitories. Note that close spacing of buildings and overhangs provide shade

Fred Stone Inc.

2. William F. Pollard Junior High

Perhaps the most difficult problem in designing schools to-day is that of scale. Rapidly increasing enrollments are not only making us build bigger and bigger schools, but there is a danger that standardization can become monotony. Education for our children is too important to be ground out on a mass produced basis. It must be a creative, individual experience.

Although the William F. Pollard Junior High is a large secondary school, we have tried to keep the scale from becoming overpowering. This has been done by articulating the exterior space, and reinforcing this with the handling of roof forms. We were fortunate to have a site which was rich in trees and land forms which became vital design considerations.

The interior classroom section is broken into a series of cul-de-sac areas which allows for a variety of room sizes and special arrangements, and gets away from the "cells and bells" treatment strung on a long corridor.

If we as architects can help give our children, particularly at the critical junior high age, a feeling that they are being treated as individuals, we will have made an important contribution.

JOHN C. HARKNESS

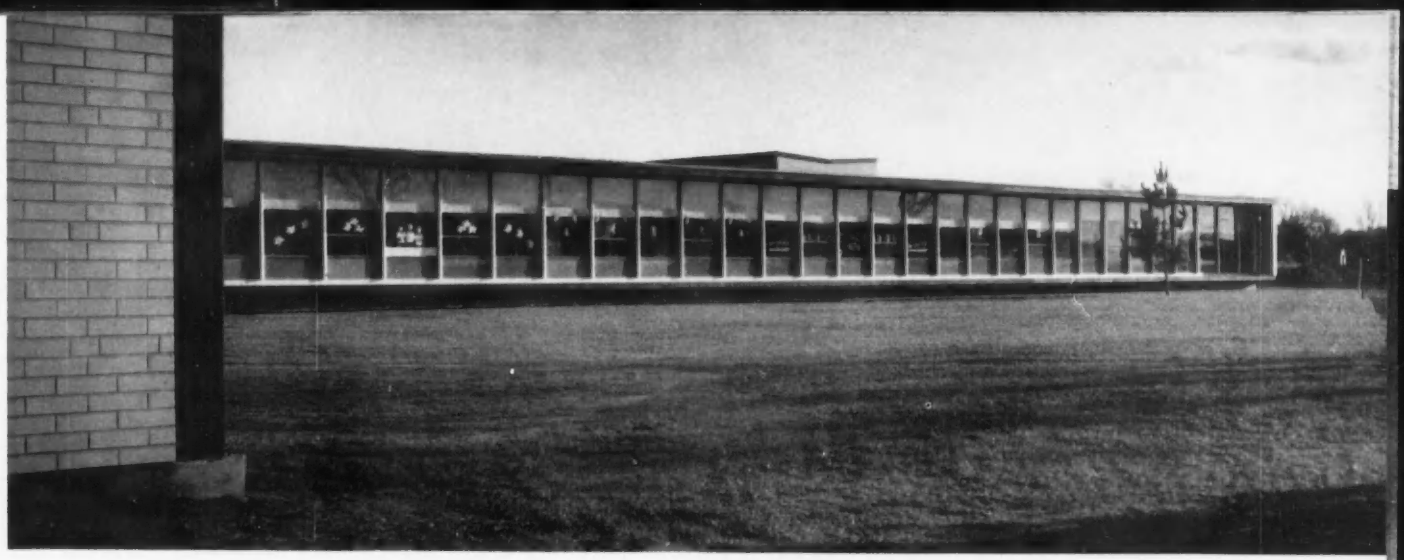
LOCATION: *Needham, Massachusetts*
PARTNER IN CHARGE: *John C. Harkness*
CONTRACTORS: *Ciaba and Co., Inc.*
MECHANICAL ENGINEERS: *Thomas Worcester Corp.*
STRUCTURAL ENGINEER: *Edward K. Trew*
LANDSCAPE ARCHITECTS: *Moriece and Gary*

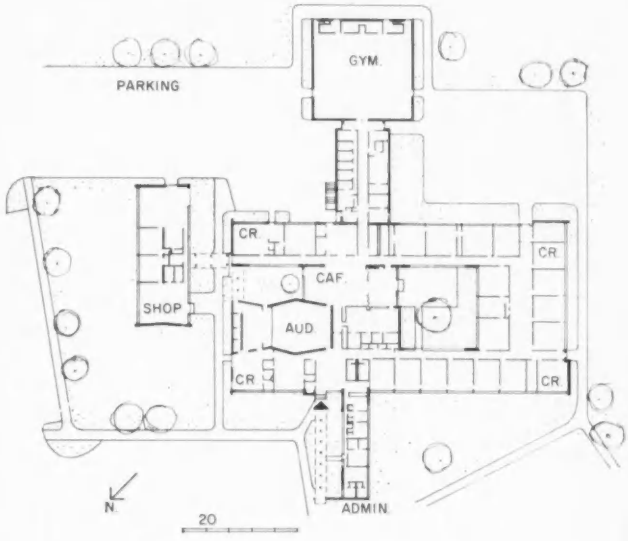
3. Littleton High School

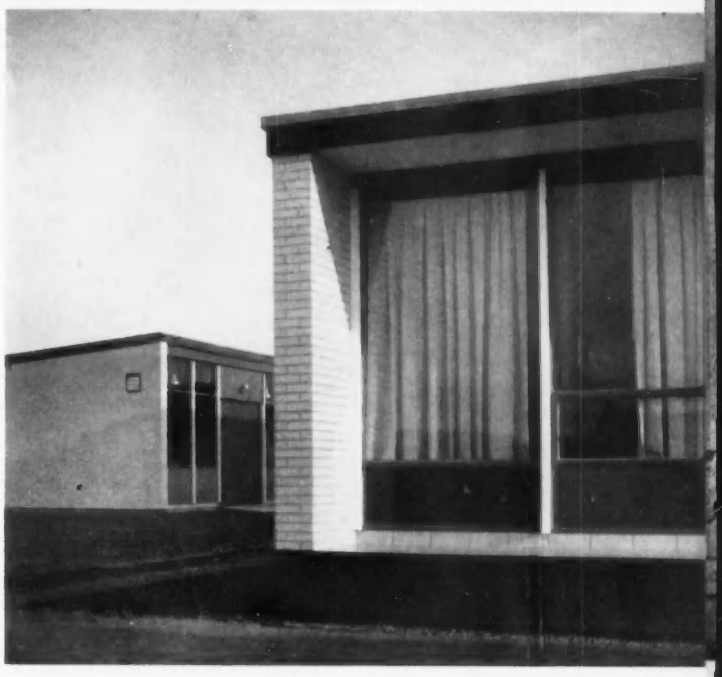
LOCATION: *Littleton, Massachusetts*
PARTNER IN CHARGE: *Louis A. McMillen*
MECHANICAL ENGINEERS: *Fred Dubin and Associates*
STRUCTURAL ENGINEERS: *Le Messurier and Associates*
CONTRACTOR: *Tornabene Bros. Inc.*
LANDSCAPE ARCHITECTS: *Moriece and Gary*

In the Littleton High School, stress has been laid on creating an atmosphere conducive to teaching and learning. Important elements of this atmosphere are variety and contrast. Changing contrasts have been made by various uses of light such as direct sunlight, controlled daylight and sky lighting. Other carefully studied contrasts have been provided by the use of calm background colors with stimulating areas of intense color in flat planes or patterns, and by creating bright communication corridors and areas with changing vistas and interest. Success was due largely to the building committee who wanted an outstanding school from an architectural as well as an educational point of view.

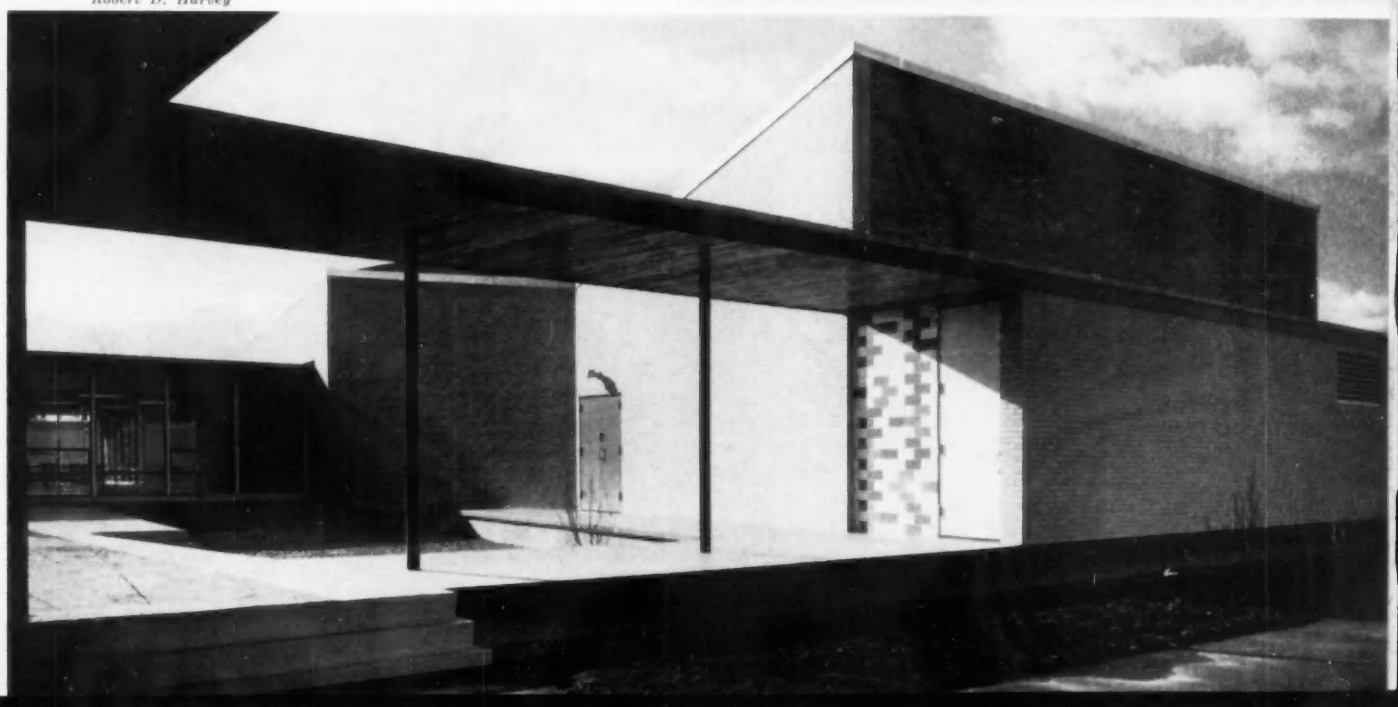
LOUIS A. McMILLEN

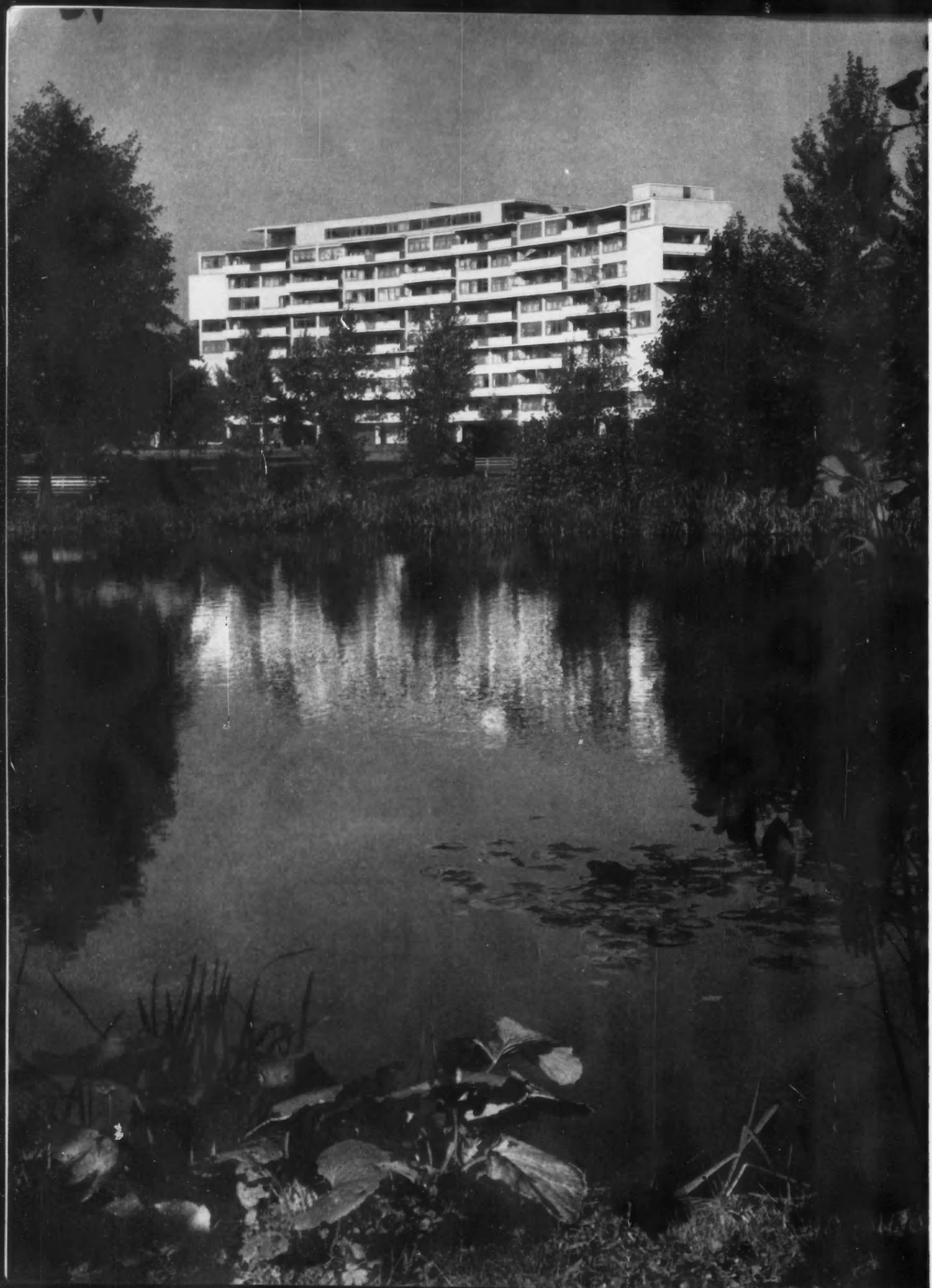


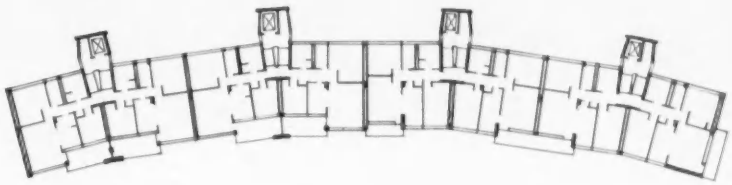




Robert D. Harvey







4. Nine Story Apartment Block

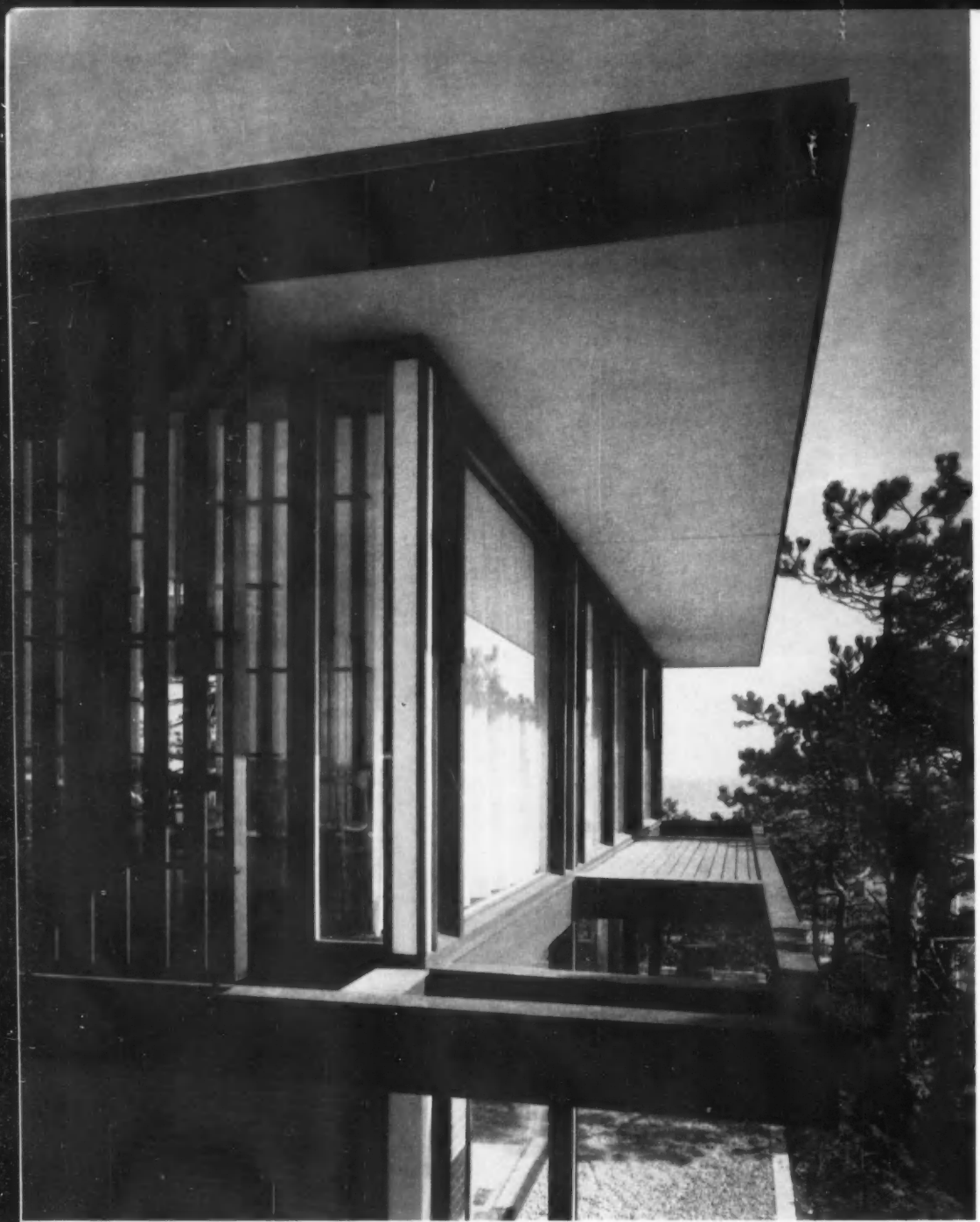
The building is part of a large development of a bombed-out area—the Hansa District in the center of Berlin, Germany. The apartment block has been designed for the middle-income class—sixty-four three-bedroom units and two larger penthouse apartments. By slightly curving the south elevation, the building makes an inviting gesture. Three different textures of white —smooth white stucco against rough white stucco, and white enameled balcony railings combined with the sky-blue soffits of the balconies give a serene impression. Part of the first floor is open for children's play.

The structure is a reinforced concrete skeleton with wall fillings of blocks made from bomb rubble. The foundations stand on a bed of sand ten feet thick for better load distribution on rather porous soil.

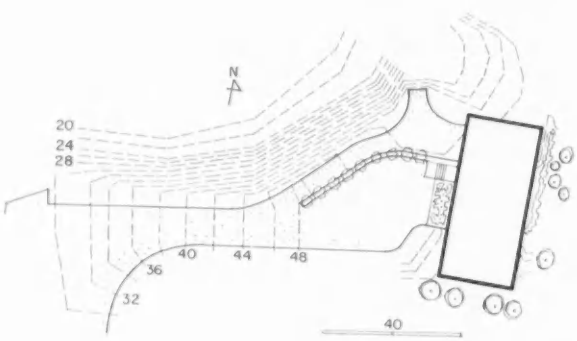
The plan of the apartments has deliberately not been made an open one, but each room is separately accessible from a hall. Since the apartments are to be rented by families of varying sizes and habits, this type of plan is more flexible than an open one, giving greater privacy to the individual of any age. It adapts better to the varying stages of the family life—young couple, babies, adolescents, old couple. In some cases the living room and the adjacent bedroom have been separated only by a curtain or a folding door instead of by a wall, allowing a large space for social gatherings. *WALTER GROPIUS*

OWNER: *Hansa A. G., Berlin*
LOCATION: *Berlin, Germany*
PARTNER IN CHARGE: *Walter Gropius*
ASSOCIATE: *Norman Fletcher*
ARCHITECTURAL CONSULTANT: *Wils Ebert, Berlin*

Karl E. Jacobs



Molitor



5. Cape Cod House

The Murchison house sits on a high sand dune at the end of Cape Cod commanding a panoramic view of the ocean in three directions—just about as far as you can get on the Atlantic without being on an island!

The two-level house was designed for a couple with married children who are in the habit of having large parties for 100 people or more. The main floor plan reflects this need by providing a living room within a living room. The central space is designed to be psychologically separate from the total open space but can be completely opened up providing an expansive area for large gatherings.

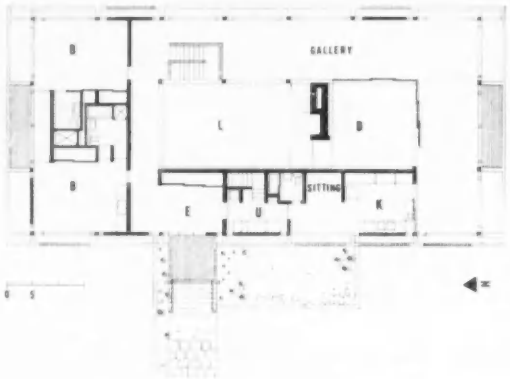
On the floor below are an office, guestroom, garage, storage room, laundry room, and mechanical equipment area.

The exterior walls are made of glass, white plaster in panels, cypress and brick. Teak, walnut and birch are used extensively within. The house is completely air conditioned.

In addition to standard mechanical equipment the Murchison house has a dumb waiter to bring supplies from the service entry, radio-controlled garage doors, a hi-fi system with microphones throughout the house, a 35KV standby generator, a water purification system, a 500-cubic-foot cold storage room for clothes, an adjoining swimming pool and bath houses with their own toilet and laundry facilities, and an automatic underground lawn sprinkling system. All mechanized equipment is isolated from the rest of the house for sound deadening, and has flexible connections. The floor of the mechanical room floats free from the walls to prevent noise transferal. *ROBERT S. McMILLAN*

OWNERS: *Mr. and Mrs. Carl Murchison*
LOCATION: *Provincetown, Massachusetts*
PARTNER IN CHARGE: *Robert S. McMillan*
ENGINEERS: *Reardon and Turner*
CONTRACTORS: *Anderson and Spinny Inc.*
INTERIOR DESIGNERS: *Design Research Inc.*

TAC: *House*



Molitor

FOUR OFFICE BUILDINGS: FOUR DIFFERENT SCHEMES

Now under construction these four office buildings—Crown Zellerbach and John Hancock in San Francisco Shell in Australia and Norton in Seattle—were designed in Skidmore, Owings & Merrill's San Francisco office and are being carried out by them as principals or in association with other firms

Common to all four of these multi-story office buildings are the problems of core location, module, structure and mechanical service, in the solution to which lie the building's economy—the amount and kind of usable area it offers, the flexibility of its office space and its functional operation—as well as the architect's own satisfaction in its effectiveness as a building. What is not common to them is the basic concept for the overall solution, different in each of these buildings because of individual client requirements.

STRUCTURE Although three of these office towers are steel framed curtain wall buildings, each is structurally distinct in concept. Crown's tower structure is a steel frame whose columns, unusually heavy on the lower floors to take lateral forces, are connected transversely by steel plate girders and longitudinally by spandrel beams. (The service core was designed as an essentially independent structure.) The Norton building uses a steel frame with precast prestressed concrete beams and a core whose combined steel and reinforced concrete walls act as shear walls. Shell is fairly conventional in framing but supports its floor system on trusses which span from the plate girder spandrel and resists all wind forces by frame action. The fourth building, John Hancock, represents an entirely different structural concept. Its exterior walls of reinforced lightweight concrete are the building's real structure. The load from these bearing walls is transferred through haunched arches at second floor level to concrete columns at the first floor level. Lateral and wind forces are taken by the central core's walls.

CORE Where to locate the building's core—essence of its transportation system, horizontal and vertical—is a primary decision governed jointly by the client's requirements and the building's use. Two of these buildings—Crown Zellerbach and Shell—were designed for single-company use, though Crown may not initially occupy all of its space. Consequently public circulation within each floor was not a consideration. Crown's core is a separate structure linked to the office tower, a solution which owner-occupancy and requirements for executive office space made feasible. Shell needed large open areas which could be used in a variety of ways; the solution was an interior core located on the side toward an adjacent company-occupied building. Both Norton and John Hancock were designed for rental but on different premises. In Norton, where space of various sizes will be rented, public circulation was a primary consideration answered by a corridor running lengthwise to the building. In John Hancock, designed for rental on either a half or a full floor basis (though adaptable to a smaller space breakdown), the central core makes for maximum use of the elevator lobby as a means of circulation, and permits daylight in each private office.

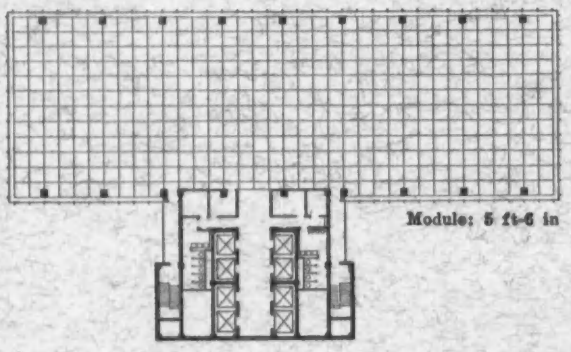
MODULE Each of these buildings uses a different module, selected for the kind and amount of flexibility it would permit. Crown Zellerbach's 5 ft 6 in. module was determined by the importance to the client of partitioned executive office space and pool space. In Norton and John Hancock, office space—intended for rental and therefore necessarily adaptable to various tenant needs—was designed for a typical office set-up: a 5-ft desk was the factor in selection of the 5-ft module used in these buildings. (John Hancock's module is actually 5 ft 1 in.; the additional inch makes possible the maximum floor as permitted by city code requirements for free standing tower structures.) The 4 ft 7 in. Shell module, smallest of the four, is a multiple of the dimensions of the largest building possible on the site and was feasible in a building where partitioned office space was less important than clerical pool space.

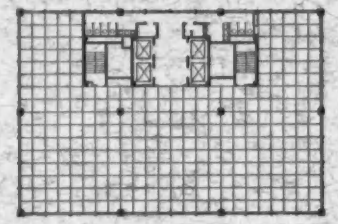
SERVICES To accommodate Crown Zellerbach's extensive service system within a 4 ft 8 in. space between ceiling and floor, electrical conduits and air conditioning ducts are run through the steel girders. Supply and exhaust are provided at each light fixture. In the Shell building the small dimension (3 ft 1 in.) of the ceiling-to-floor space offered little room for ducts so they were run through the open webs of the trusses supporting the floor slab. Norton's 4 ft 2 in. depth required running the ducts through prestressed concrete beams. Services run to each module with supply and exhaust in the ceiling. Hancock's ducts run between floor beam and ceiling in a depth of 3 ft 6 in., using space between the floor beam T's for crossovers. Services run to every other module.

Four Office Buildings: Four Different Schemes

Morley Baer

Wolfgang Sievers



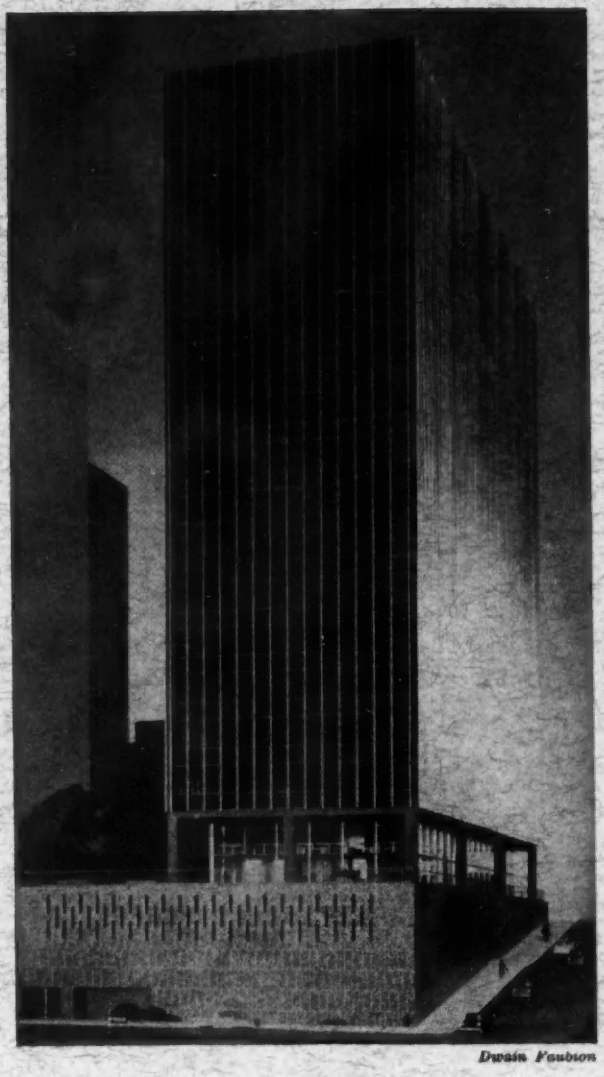


1

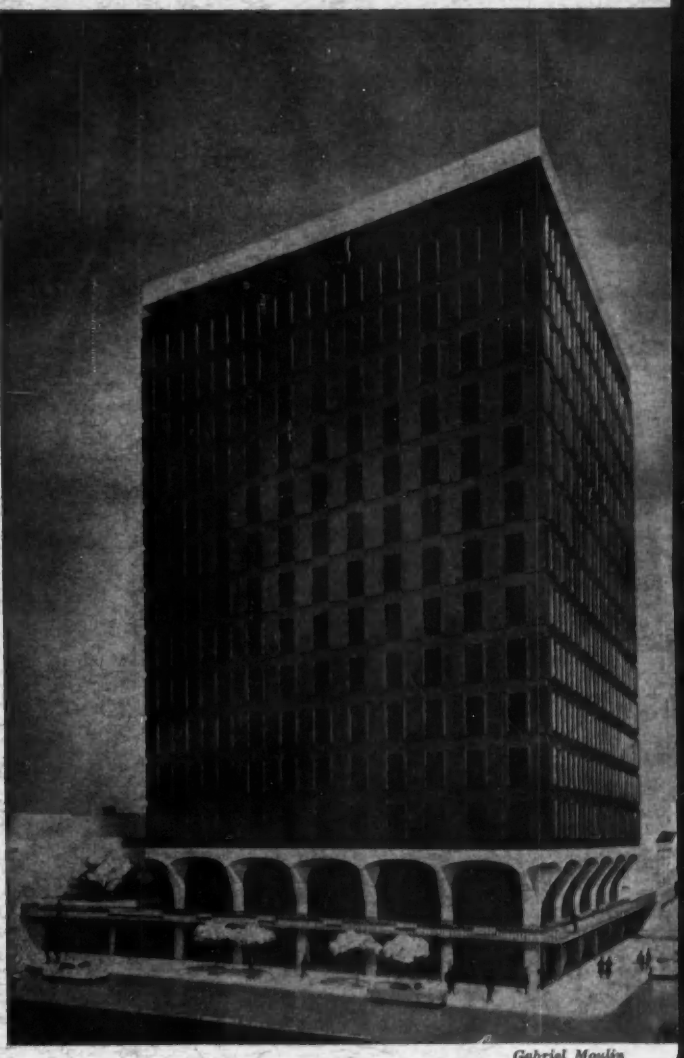
CROWN ZELLERBACH HEADQUARTERS BUILDING, SAN FRANCISCO Crown Zellerbach Corporation, client; Hertzka & Knowles and Skidmore, Owings & Merrill, San Francisco, associated architects; H. J. Brunnier, structural engineer; Haas & Haynie, contr.

2

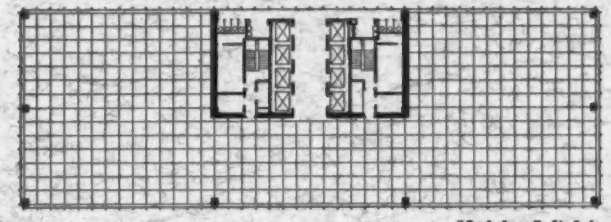
SHELL HEAD OFFICE BUILDING, MELBOURNE, AUSTRALIA The Shell Company of Australia, client; Buchan, Laird & Buchan, Melbourne, and Skidmore, Owings & Merrill, San Francisco, associated architects; Lewis Construction Company, Pty. Ltd., contractor



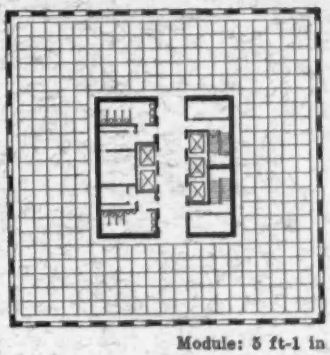
Dwain Faubion



Gabriel Moulin



Module: 5 ft-0 in



Module: 5 ft-1 in

3

NORTON BUILDING, SEATTLE Northwest Building Corporation, client; Bindon & Wright architects; Skidmore, Owings & Merrill, consulting architects; Bouillon, Griffith & Christofferson, mechanical engineers; Howard S. Wright Construction Company, contractor

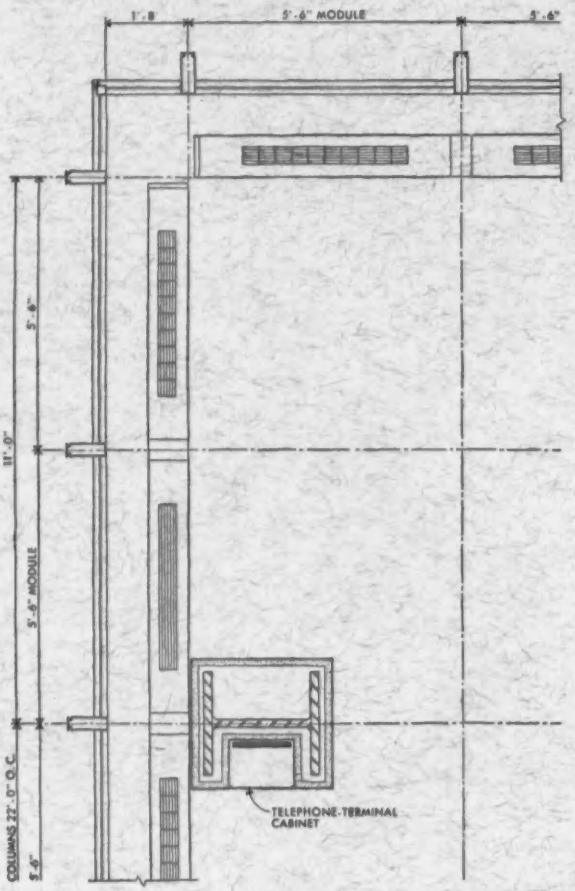
4

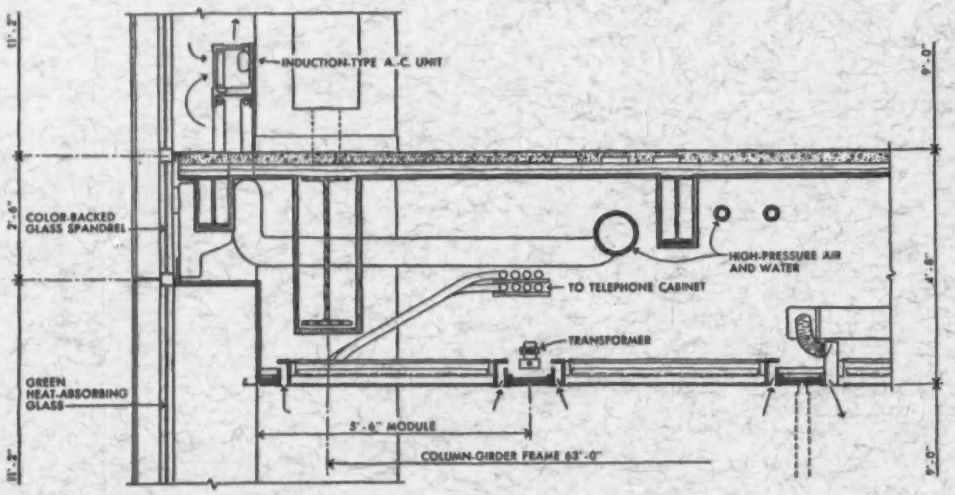
JOHN HANCOCK WESTERN HOME OFFICE BUILDING, SAN FRANCISCO John Hancock Mutual Life Insurance Company, client; Skidmore, Owings & Merrill, San Francisco, architects; Cahill Brothers, Inc., contractor

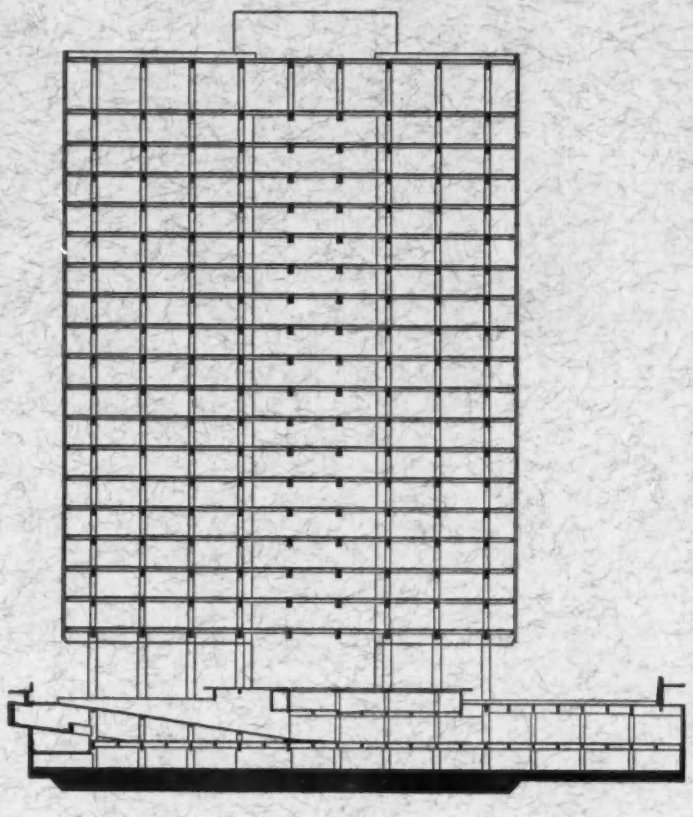
1 CROWN ZELLERBACH HEADQUARTERS BUILDING

San Francisco

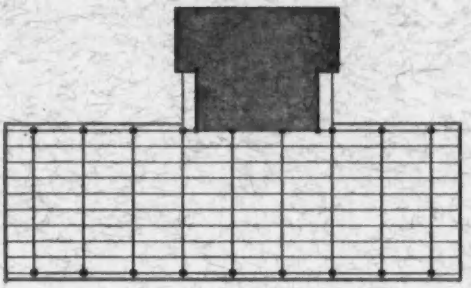
Crown Zellerbach's new headquarters is actually two buildings linked together: a 20-story office tower and a service core 16 ft taller than the tower. The tower's glass-enveloped steel frame rests on a continuous reinforced concrete mat 8 ft thick which distributes the column loads over the entire area under the tower. Two floors needed for parking and service, both of which could be located underground, justified the excavation (45 ft, to bearing stratum) necessary for this foundation. The building's structure is essentially a rigid transverse frame of welded plate girders, spanning 63 ft, and welded plate columns, set 22 ft o.c. These columns are of much heavier section from garden level to second floor (a large open space with no intermediate stiffening members) than from second floor up. Their exceptional weight (2500 lb per sq in.) and size are due to the fact that, together with the transverse girders, they form bents designed to resist lateral forces for the entire office building. The floors are cantilevered 11 ft—half a bay—at each end. There are no intermediate interior columns so all office space is clear.

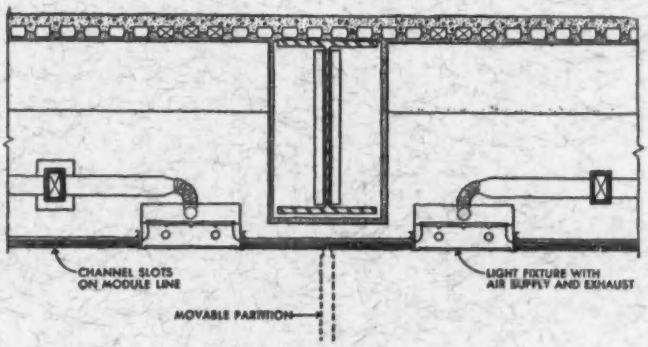






Walsh Photo



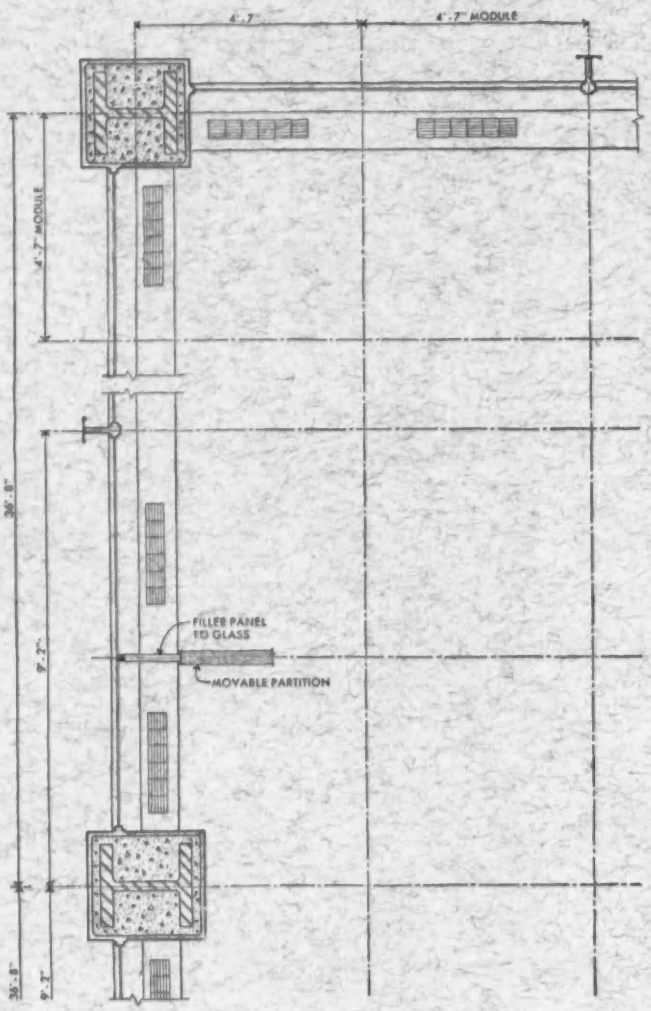


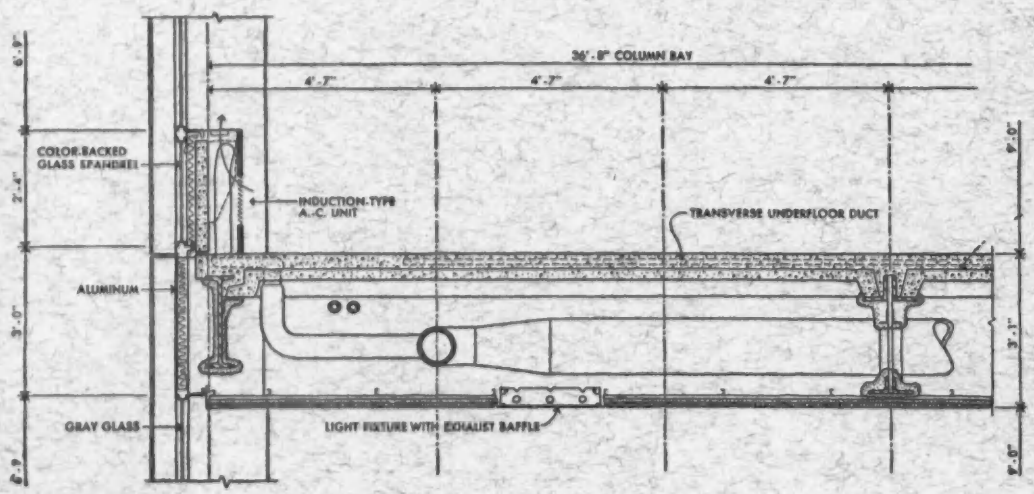
San Francisco's first tall curtain wall building is also its first office building on a plaza. Glass-walled lobby will look out on sunken garden. Curtain wall consists of heat-absorbing green glass and grayed blue-green glass spandrel framed in aluminum. Core building will be surfaced with caramel brown glass mosaic. Section (top, left) is through office tower; plan shows framing

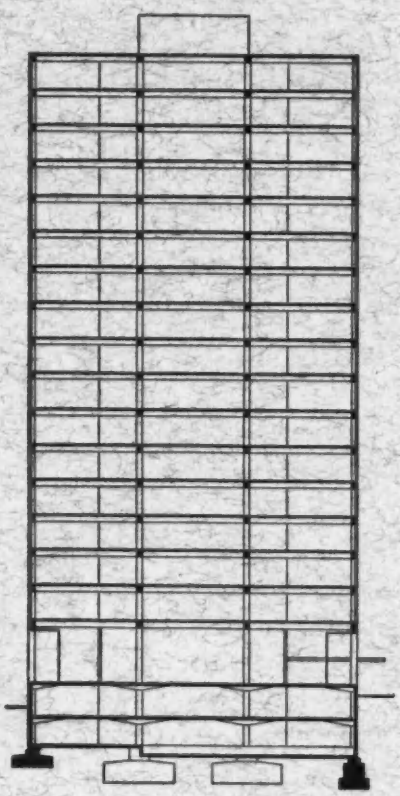
2 SHELL HEAD OFFICE BUILDING

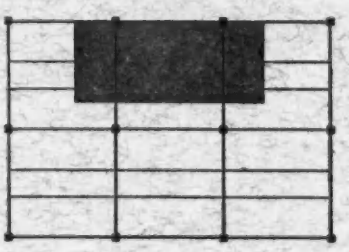
Melbourne, Australia

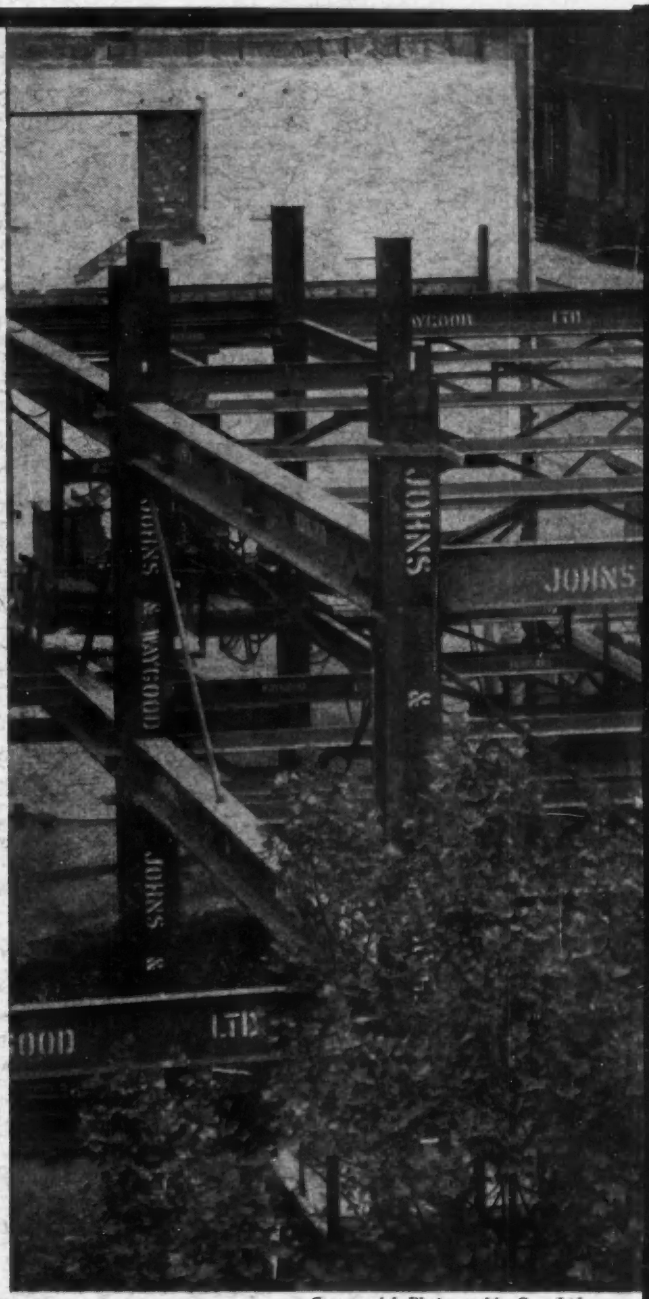
The Shell building's 19 stories will make it the second tallest building in New South Wales. A straightforward solution to office tower design, it has certain unusual aspects: it is to be joined to an adjacent company-occupied building at seventh, eighth and ninth floors by a three-story bridge, and this necessitated an unusually thin ceiling-to-floor depth to permit alignment of floors in both buildings and to obtain the maximum number of floors within Melbourne's building restrictions. This thin section was achieved by use of precast concrete channel slabs spanning between floor beams as a base for the floor slab, and by supporting this floor system with an open steel truss through whose voids the ducts run. A 36 ft 8 in. column grid, the location of the core on the side toward the existing building to facilitate circulation, and the building's height were the factors which determined the building's structural solution. This consists of a rigid steel frame using 12 columns (I-sections built up of heavy steel plates). The module in this instance was a secondary design factor since partitions would be infrequent and where used would not run to the ceiling so that services to each module would not be essential. Mechanical equipment (the building is completely air conditioned) is located in the basement.











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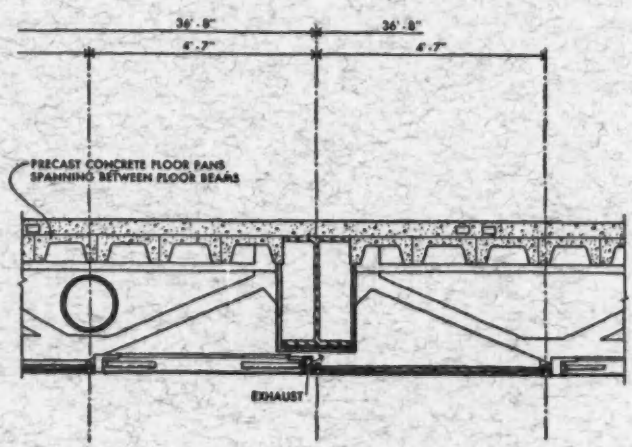
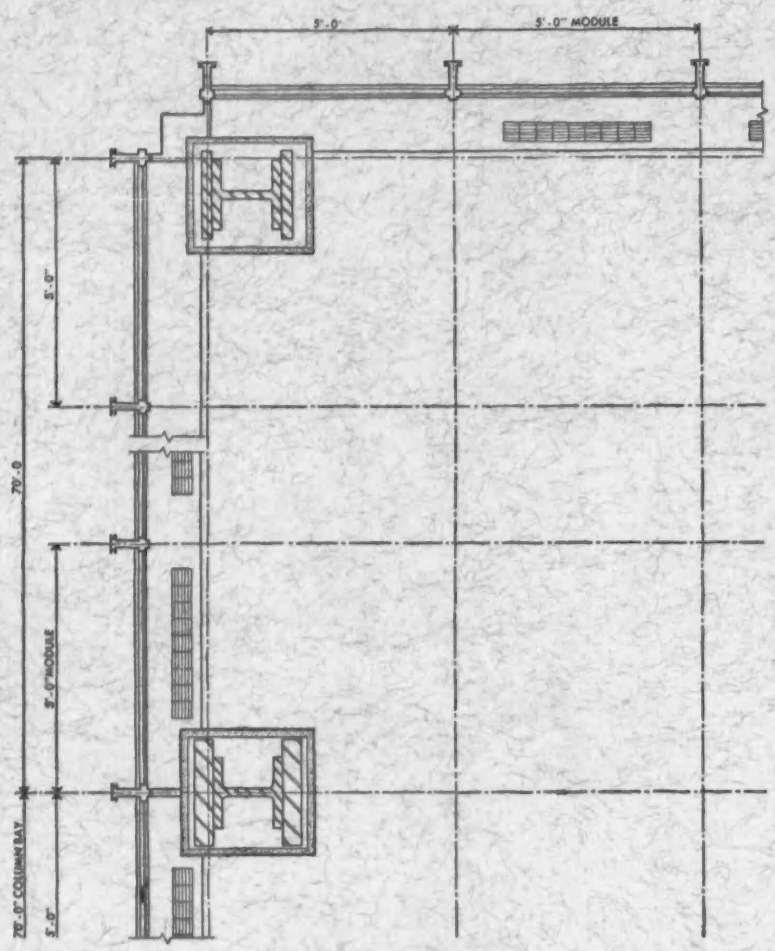
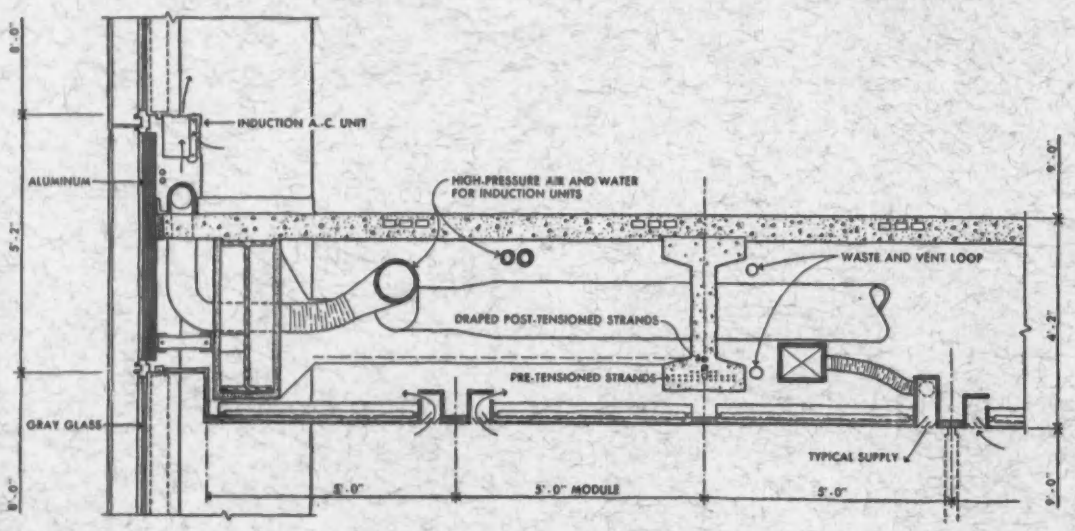


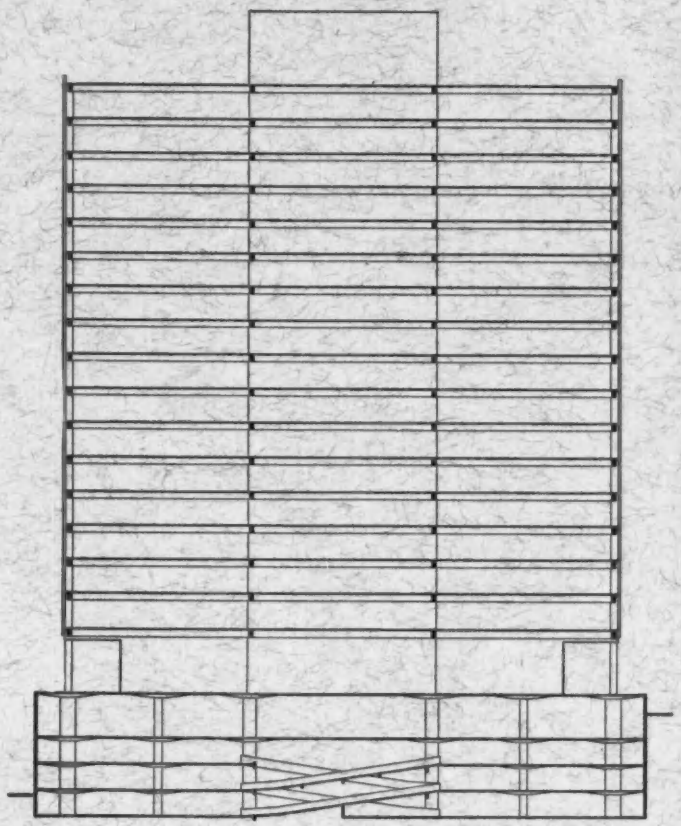
Structural steel frame of Shell building is sheathed in aluminum; spandrels and mullions are also of aluminum. Enclosing walls are of heat-reducing gray glass. Plan (opposite page, top) at building corner shows mullions set on every other module; partitions can be set on any module, with filler panel to glass on modules between mullions. At left: section and structural plan

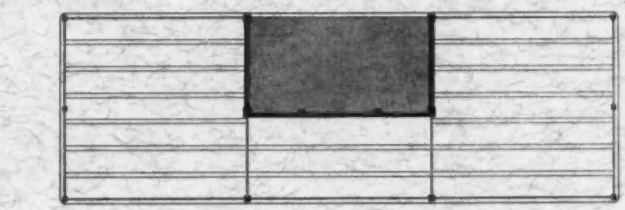
3 NORTON BUILDING
Seattle

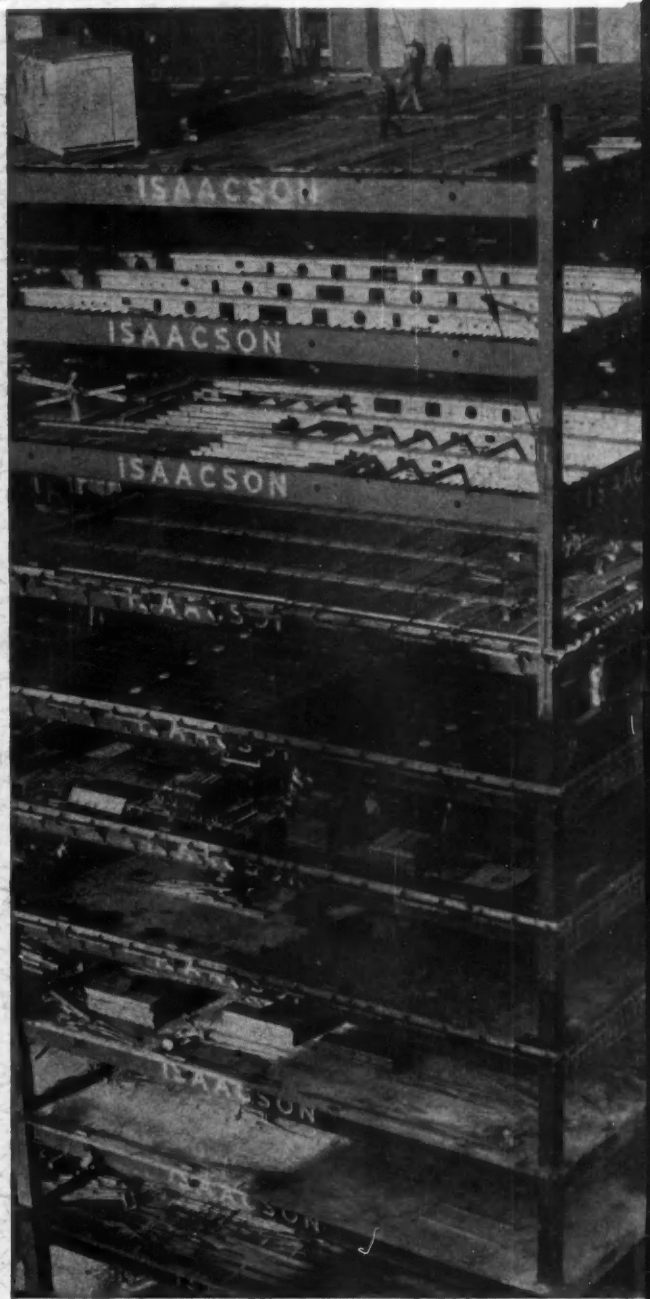


The 21-story Norton building is of particular interest not only as Seattle's first skyscraper since the late 1920's and as this country's first building over six stories to use prestressed concrete members, but because of the way in which its structure combines steel and reinforced concrete. The building's frame consists of four transverse column-girder frames, repeated for 16 floors, with precast prestressed concrete beams which span 70 ft as supports for the poured-in-place concrete slab floor. Each floor is three bays long by one wide (210 ft by 70 ft). Earthquake forces are taken by the walls of the service core located at one side of the building. Core walls are of special design: the longitudinal wall, which takes all longitudinal lateral forces, is a steel truss bent combined with a reinforced concrete shear wall; end core walls, which take all transverse lateral forces, combine reinforced concrete and rigid frame steel shear walls. Office space is column-free, an important consideration in a building designed, as Norton was, for 100 per cent rental. All air conditioning equipment (except cooling towers) is located in the basement which, because of a sloping site, is three stories above grade at its low side.

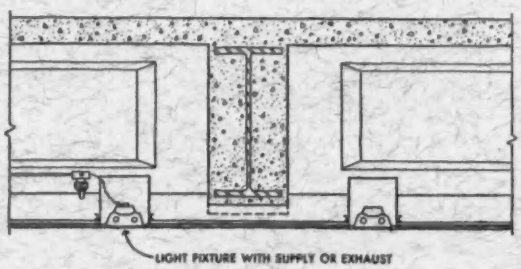








Roger Dudley

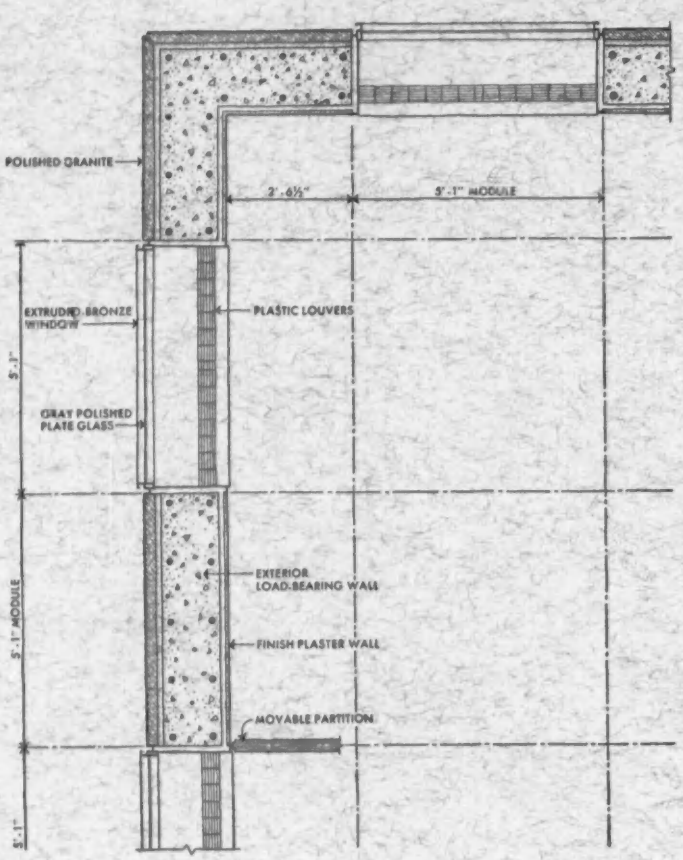


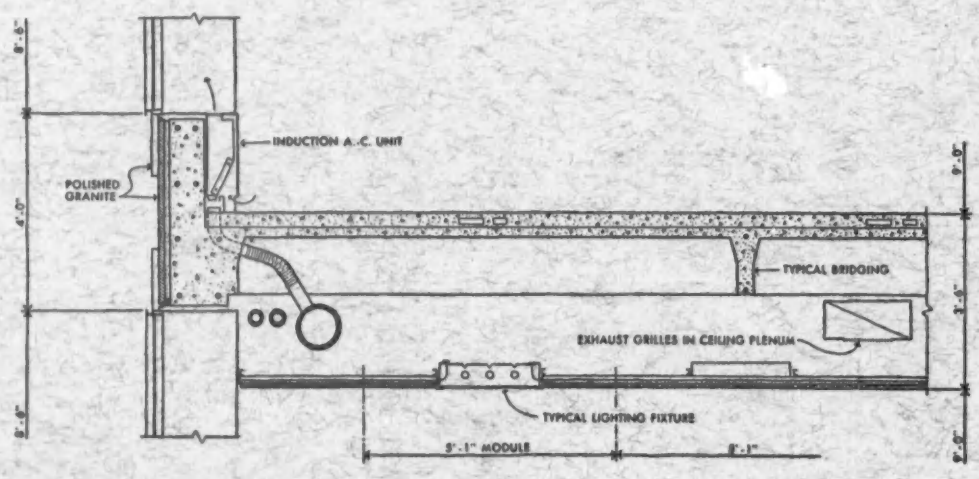
Enclosed in a curtain wall of gray heat-absorbing glass framed in aluminum, Norton building stands on a sloping corner site in downtown Seattle. Entrance to lobby level is on site's high side, to garage on low side. Section (left, top) through length of building and structural plan show long clear span on office floors. Each bay is 70 ft square

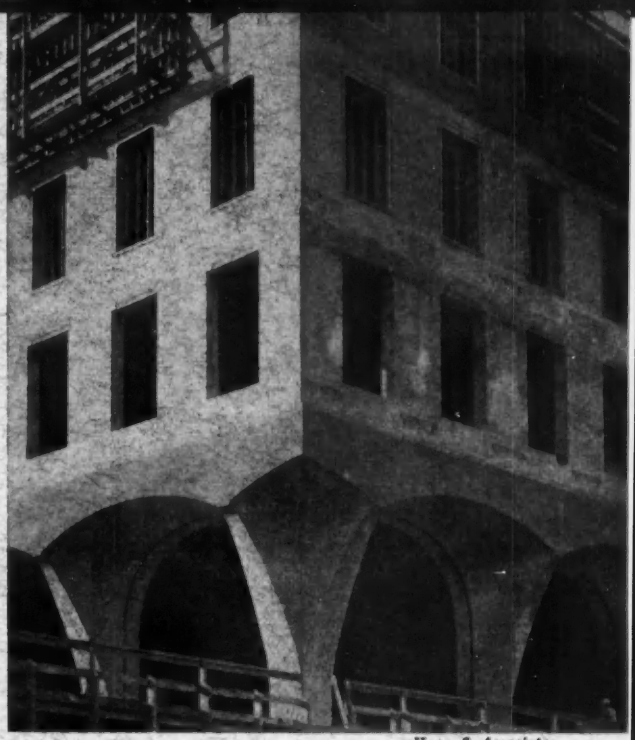
4 JOHN HANCOCK WESTERN HOME OFFICE BUILDING

San Francisco

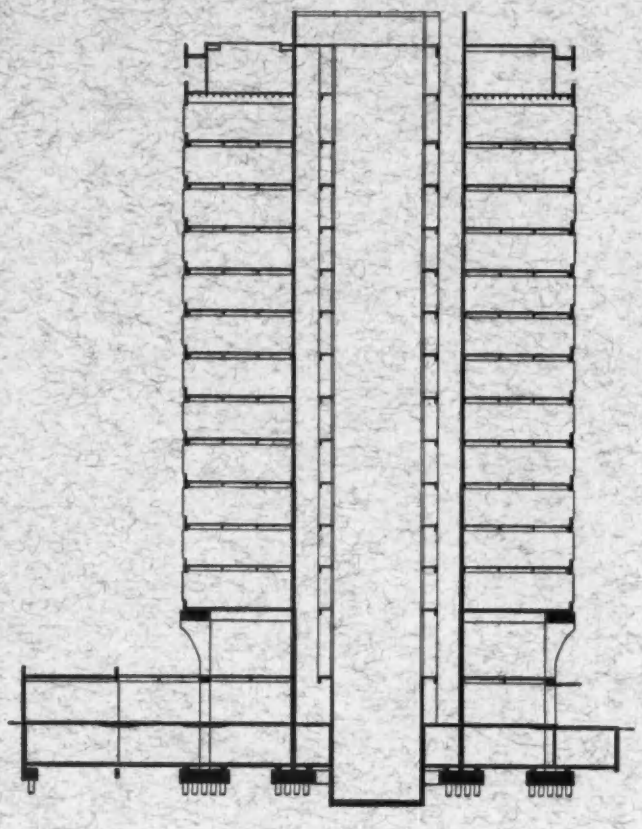
The John Hancock building, under construction in San Francisco on a site just two blocks from Crown Zellerbach's glass tower, is a reinforced concrete building whose exterior walls are half solid, half glass—in direct contrast to curtain wall buildings. Loads from these exterior bearing walls are transferred to the set-back columns at first floor level by the haunched concrete arches on the second floor. From this structural solution, strongly sculptural as well as architectonic, derives the building's unique expression. Seismic and wind loads from the exterior walls are distributed into the central core's walls by the third floor which acts as a very stiff diaphragm. Typical office floors use a conventional T-beam system spanning between exterior wall and core. Office space is column-free. The mechanical floor at the top of the building has an unusual detail (see opposite page): a continuous recess around the building immediately under the parapet provides for air intake and exhaust and for suspension of window-washing equipment, with easy access from the mechanical floor. Essentially a solution to mechanical problems, this detail has architectural gains as well: the parapet, of precast concrete panels finished to match the arches below, provides a positive architectural terminus to the building.

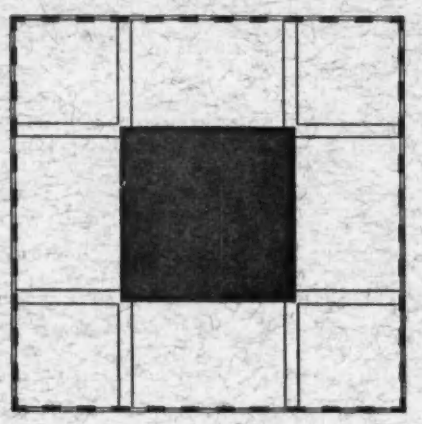


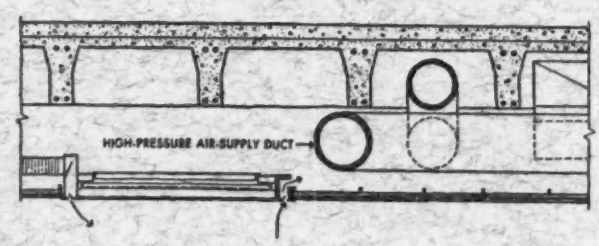




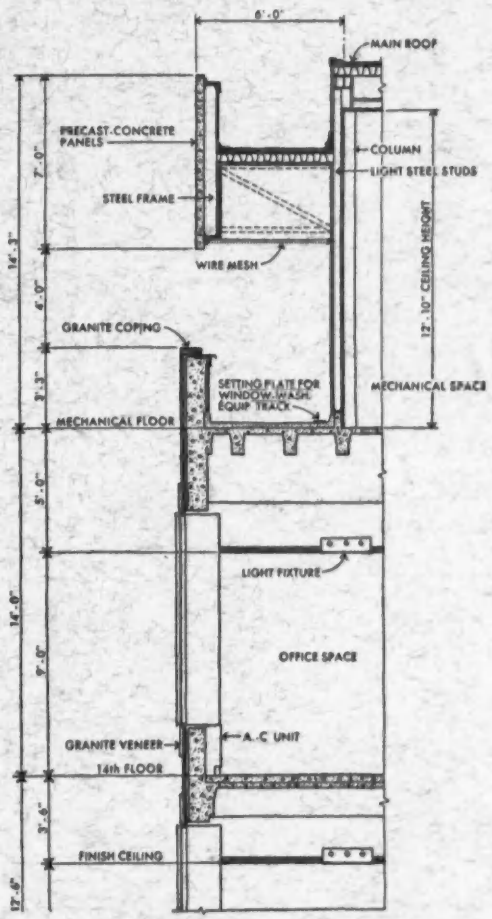
Haas & Associates

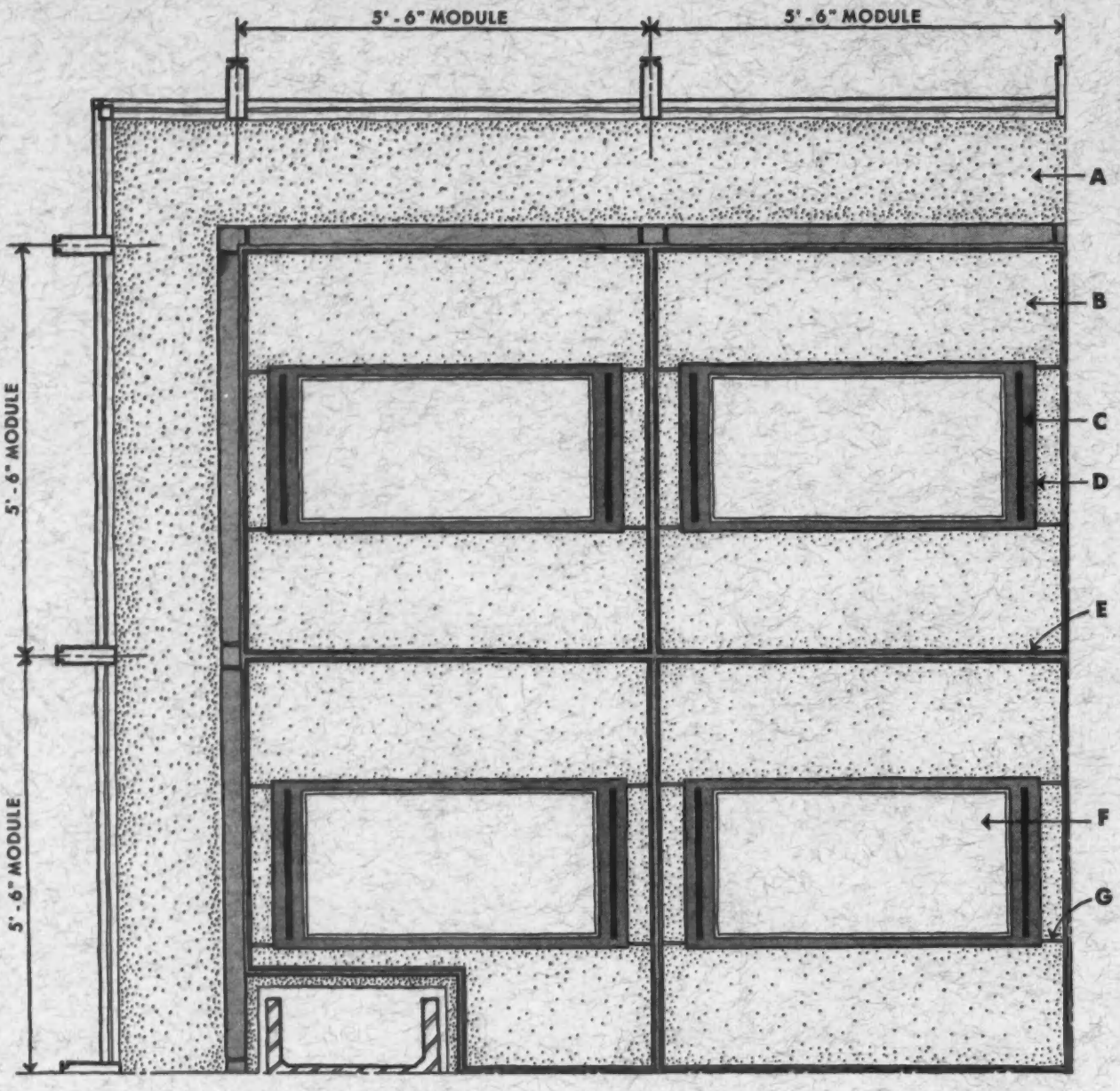






Detail at parapet shows provision in continuous recess for air supply and exhaust at any required point. Recess will be illuminated at night, circling top with light





Crown Zellerbach Reflected Ceiling Plan

Every module has complete service, with air supply and exhaust combined with lighting fixture. Above ceiling panel entire space between ceiling and next floor is used as plenum, reducing ductwork and permitting direct pickup of heat from ballast of fluorescent lights before it affects room load. From outside building, ceiling panel appears to float, suspended against dark painted plaster curtain recess. Partitions can be located on any module. This building's generous 5 ft 6 in. module, providing spacious executive offices, also is basis for clerical pool space which was other primary program requirement

A. CURTAIN POCKET

B. GLASS-FIBER ACOUSTIC BOARD

C. AIR SLOTS

D. METAL FIXTURE FRAME

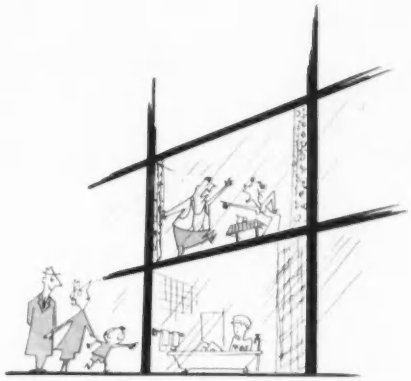
E. ALUMINUM CHANNEL FOR TOP OF MOVABLE PARTITION

F. ACRYLIC-PLASTIC LIGHT DIFFUSER

G. JOINT COVER

THE HUMAN PROSPECT AND ARCHITECTURE

By LEWIS MUMFORD *



"The Package"

In dealing with the state of modern man, I wish to push beyond the conditions that have developed during the last half century; for the wars, plagues, brutalities, exterminations that have reduced life to a subhuman level are symptoms rather than causes. The great fact that underlies our whole life is that mankind is confronted today with a situation that is unique in history: some of man's oldest dreams have actually come true—the dream of flight; the dream of instantaneous communication; the dream of action at a distance—what we now call remote control—and ultimately the dream of limitless power and limitless wealth.

As dreams, expressed in religious myths, all these achievements go back to the very beginnings of civilization, in the late Stone Age and the Bronze Age, some five to seven thousand years ago. With the first achievement of power, order, and scientific knowledge in the great river cultures of Babylonia and Egypt came the desire to expand these physical functions without limit, at whatever cost to life. Provisionally, these civilizations endowed their gods with the powers their monarchs did not yet command. Owing to the lack of technical means, the increase of physical power and material abundance served only an infinitesimal minority: the rest of the population remained weak and poor and ignorant. They participated only vicariously in the aristocratic way of life. Lacking the bare necessities of food and shelter, the mass of men thought only of material abundance. So even now we fail to understand the biological irrationality of the enchanting Bronze Age dream of idle leisure and effortless wealth and unbridled power, achieved as if by magic.

Today the powers that once belonged only to absolute monarchs or primordial gods have become universal: they are a collective possession and by their very nature cannot be monopolized by a group, a class or a nation. More than that: functions and power that gods once possessed only in human fantasy are now exercised by ordinary men—bureaucrats, soldiers, civil servants, engineers—people who are not conspicuously endowed with any equivalent magnitude of love and virtue.

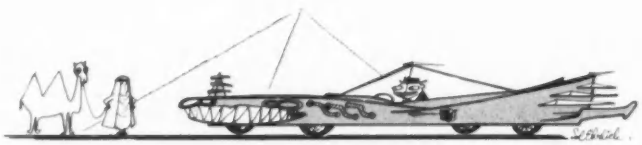
This is in fact the period of the Common Man. The Common Man, though without historical insight, without special moral discipline, or sufficiently unified and comprehensive powers of thought has, by an almost automatic process, been endowed with the functions and attributes of the primitive gods. Possibly only those who have made a study of Babylonian or Egyptian theology will fully realize all the terrible possibilities implied in this situation. But the point I wish to make is that though many, perhaps most, of our contemporaries are justly proud of their powers of organization and their organization of power, they are mythically and ideologically still living in the extremely primitive and brutal world of the early Bronze Age. Their mentality is singularly like that of an early Pharaoh. Their conception of modern civilization is not merely limited: it is ideologically antiquated—indeed as deeply archaic as the belief in the divinity of kings.

Only the ignorant or the extremely innocent could mistake this transformation of modern man into a being endowed with godlike attributes for an altogether desirable achievement, for the history of the last forty years, as well as more ancient records of organized violence and bestiality, shows that we have imprudently given power and authority to the demonic elements in man as well as the divine. Actually, the result of all our brilliant achievements in science, technics, economic administration and organization are contradictory and paradoxical. In many departments there have been striking gains not merely in energy and vitality but in a higher sense of justice and human decency. An economy of abundance promises to everyone some of the leisure and largesse that before this only the aristocracies knew. Who would deny that these are great positive values?

But modern man has lost the automatic discipline of poverty and scarcity; and as is well known in every biological process, too much "may be as fatal to life's prosperity" as too little. It is not merely during economic crises that we face "starvation in the midst of plenty." Already we have more power than we can use wisely and more scientific and technical knowledge than we can intelligently assimilate and put to good use.

What is the result? We now have external power

* An address to architectural students in Rome



Sketches by Sol Ehrlich

"The Pyramid"

on a scale that exceeds our wildest dreams: but that is counterbalanced by an inner feeling of extreme impotence, nausea, frustration, and despair. Never before in the most dismal phases of man's development has there been such a universal sense of anxiety, such a sense of the emptiness and futility of life, of a general lack of meaning and purposefulness. What the artists today are revealing in their endless symbols of disintegration, the common man, who still is healthy enough to enjoy his physical liberation, will become aware of tomorrow.

It is not a little strange that the artist of today, instead of exulting in all the possible manifestations of our godlike powers, can exhibit his creativeness only in destructive, violent, and infantile forms, without intellectual content or moral values, indeed too often demonstrating a positive love for corruption and evil, as my countryman, Tennessee Williams, recently was honest enough to admit in an interview with himself? Not a little of our modern art shows a kind of perverse vigor, as if it drew directly upon primordial sources in the Id. But this should not conceal the fact that its meaning lies in its meaninglessness, its content in its lack of contents—something not to be confused with abstraction—its only value is a denial of the possibility of values. If modern science and technology spring from the ideals of the Bronze Age, a large part of subjective modern art seems to go back even farther to a period before images or words were yet formed, when human feelings were inchoate and incommunicable.

For a long time our surface health and energy reinforced our ignorance and concealed the symptoms I have been trying here to bring to light. In the arts of construction and fabrication one must look behind the outward form to detect the inner weaknesses: for if a building consciously expressed disintegration it would not stand up; and if a motor car expressed disintegration it would not go. But even in modern architecture the symptoms are disturbing. Unhappily, when one examines modern building or urbanism with a critical eye, unmoved by current fashionplates and advertisements, one finds the same contrast between the outward form and the inward disruption. Take architecture for illustration. The dominant architecture of our day can be grouped under three heads: the Package, the Pyramid, and the Procrustean bed.

The Package may be defined as an external envelope, a covering of glass and steel or concrete, whose form bears no functional or purposeful relation to the object or the activities it encloses. The sole purpose of the package is to dazzle the spectator and to advertise and sell the product. By definition, such a shell is most effective when it is most empty. For the daily functions of family life, in the extremes of hot and cold weather, an all-glass apartment house, the perfect package, would turn into a place of torture. This neglect of the human contents is a typical vice of our time.

Perhaps it is no accident that the Pyramid, one of the most ancient of architectural perversions, is being revived in our time, though the new forms disguise its nature. Pyramid-building, whether it takes the form of a "skyscraper-a-mile-high" or a cantilevered foundation almost as expensive to construct as the building it supports, demands a sacrifice of important human needs to empty pomp and vanity. Thus, according to this definition, our new American motor cars are pure examples of pyramid-building: and so, in even greater measure are our atomic and hydrogen bombs, for they are part of the modern cult of death and might become the tombs, not of a few pharaohs but of the entire human race.

Finally, the third point of physical over-concentration and therefore organic disintegration is the Procrustean bed. Our admirable and useful mechanical aids become merely procrustean when one mechanical function, or one form of mechanical organization, dominates every other activity and represses man's own proper functions. There are many more ways than the Greek innkeeper knew to saw off human legs or stretch the human frame to fit an arbitrary iron bed. The danger does not come from the use of the machine but from the displacement of man as a responsible agent, who must control and direct its results for human purposes. Once we begin to fit people to the needs of the machine there is no limit to the physical and mental deformation that may be practiced. In a purposeless world, mechanization inevitably takes command.

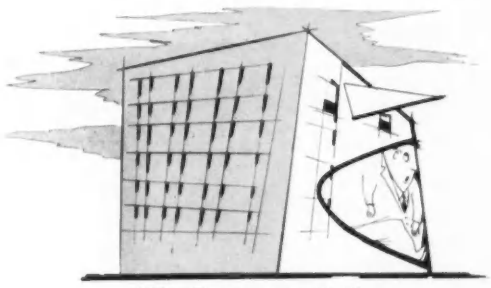
Many of our contemporaries still think that the problems of our age can be solved by further applications of science and technics: but this view shows a failure to understand the limitations of these disciplines, until they become a part of a much larger and deeper conception of life and human development. We deceive ourselves if we think that by producing more elegant packages, more pretentious pyramids, and more automatic machines with

built-in electronic brains, we are meeting the demands of modern life or expressing the ideals of modern culture.

Actually, most of our favorite modern activities belong by direct inheritance to the Bronze Age, and they express the childish limitations of Bronze Age minds. We are in fact using the most elaborate and refined techniques of mathematical and physical science to fulfill an archaic scheme of existence. This scheme leaves completely out of account the historic perspectives of the last five thousand years, the cumulative moral insights of the prophetic religions, and our ever-deepening understanding of the nature of life itself, which transcends all our ideological abstractions. Bronze Age man had alienated himself from the world of life by overemphasizing the role of organization and external control. That is why he and his present-day descendants still dare to cherish such a contradictory and childish concept as limitless power, limitless wealth, or the limitless expansion of the machine in every direction, without having any inner principle of control or without any purpose or goal—power for power's sake, motion for motion's sake, speed for speed's sake, and finally in our day total destruction and extermination for no rational purpose whatever.

Unlike the world of atoms and stars, biological activities are self-directing and goal seeking. In man these tendencies rise into consciousness as ideals, projects, and plans. Once these activities relating to a possible future are neglected or repressed, life itself loses its meaning for man. The higher man's development the greater his need to re-think his past, reconstruct his present and forecast his future. To love and to create are necessities of human growth.

The needs of life, then, are much more subtle and complex than the needs of machines, and for this reason a good mechanical solution to a human problem can be only a part of an adequate organic solution which meets the needs of life in all its dimensions. In the case of an infant, we have experimental evidence to show that unless a baby is loved and fondled it will not be adequately nourished, no matter how much food we give it. By the same token, visual and aural order may be as necessary for health as hygiene and sanitation. The architecture, the engineering, the politics or the medicine, that does not recognize the primacy of life, belongs to the barbarous Bronze Age, not to our own time and still less to the future. The world of machines corresponds to the system of reflexes and automatic processes in the body. When we are properly oriented to life and reality, the higher functions of man, those concerned with meaning, value, and form, will dominate and transform all our instrumental and practical activities, so that no part of our daily life will still be empty or insignificant. Until we recognize the role of these higher functions, the vast powers man now commands will only give scope to destructive impulses and acts, through which the forces of life seek to recapture the autonomy and freedom that have been denied them.



"The Procrustean Bed"

Man now commands the forces of nature as never before; he has achieved a godlike power to understand and direct them. But all this scientific intelligence and technical facility will prove vain unless we understand that we must create a new race of Galileos and Giambattista Vicos who will help us to realize to the full our human potentialities and enlarge all our specifically human capacities to feel, to imagine, to love and to create. Unless all our works are works of love—and I mean love in every sense, from the erotic to the divine—they are not yet in the realm of the human.

Within the dimensions of this talk I can go no further. In a little book called "The Transformations of Man"* I have given a more adequate presentation of these ideas. In that book I have tried to picture a further stage in man's development that would carry forward and unify every aspect of historic experience, and transcend the limitations that have brought every past civilization to an end. But fortunately in the very act of giving this lecture I have illustrated my most fundamental point. For I have spoken to you, not as a writer, not as a philosopher or a scholar, not as a critic of architecture or a professor of city planning, not as one having professional authority or a specialist's competence. On the contrary, I have addressed you as a man, as one who of right exercises all the biological and spiritual functions of man, and who therefore regards all other forms of authority as secondary and supernumerary. In short, I have dared to be human and I have appealed to you primarily as simple men and women. In all humility, I invite you to follow this example, in your thought, in your work, in your social and family relations. Yes: dare to be fully and wholly human: dare to put wisdom above knowledge and love above power, the imperfect but living whole above the perfect but lifeless part. It is not easy to be human; but those who have the courage not to surrender their humanity, tomorrow, under a less murky sky, may catch once more a glimpse of the divine.

* World Perspectives Series. 1956.

A RESTFUL HOUSE FOR A RESTFUL SITE

Simple lines and construction materials give this house a quality of restfulness well suited to the site, a wooded lakeside lot sloping gently downward from the street to the water's edge.

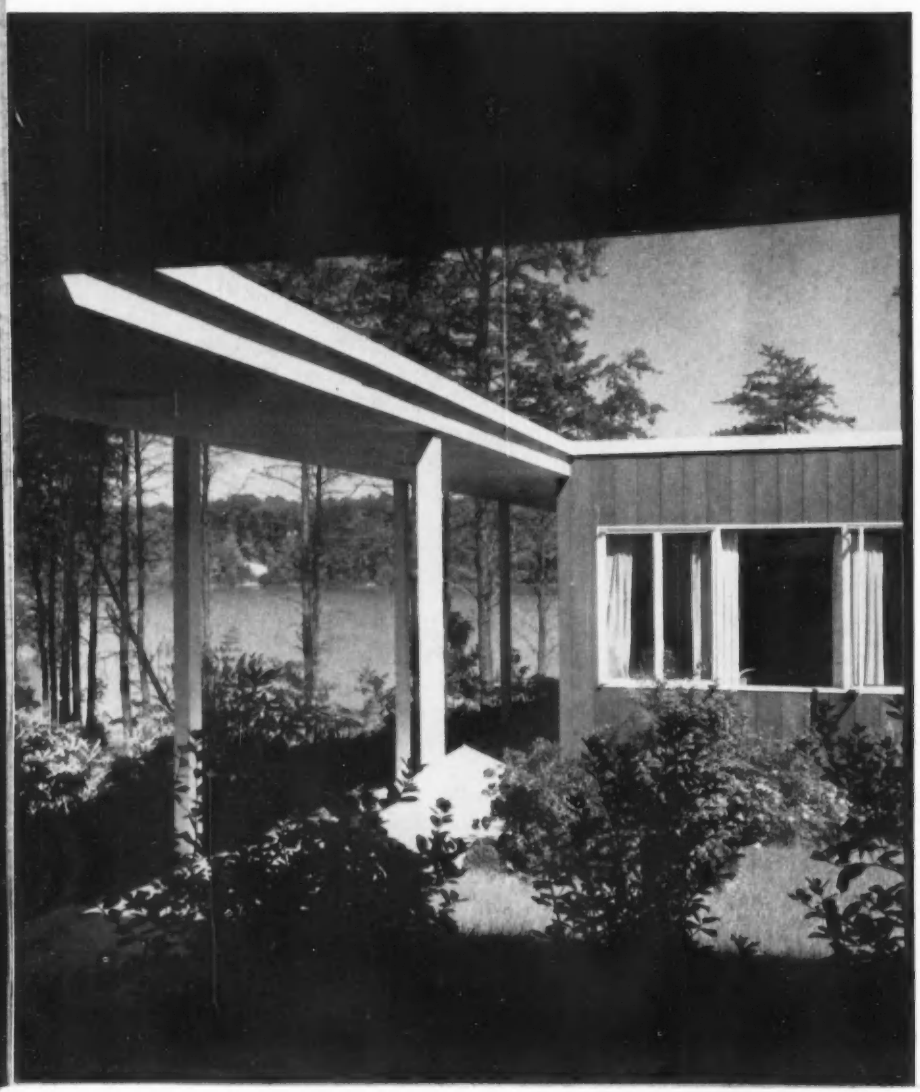
The house is approximately square, tapered slightly to fit the building restriction lines. It is straightforward in plan, with an interior utility core (lighted by plastic domes) separating the bedroom and living areas. The bedrooms, three steps above the rest of the house, face a landscaped court between the house and the carport; the living-dining room overlooks the lake. One end of the living area is partially enclosed by cabinets to form a study-guest room. A large screened porch at the opposite end is adjacent to the kitchen and can be used for outdoor dining.

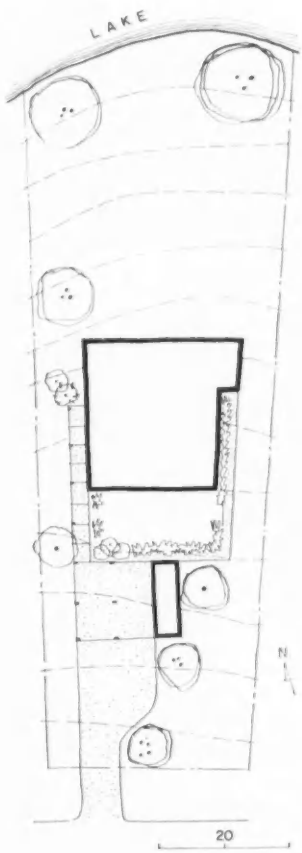
Interior walls are painted plaster and floors throughout are carpeted except in the kitchen-utility area and baths where asphalt tile is used. Closet walls are natural birch; built-in cabinets—all designed by the architect—are fir plywood and fiber board, painted. Exterior walls are natural redwood vertical siding.

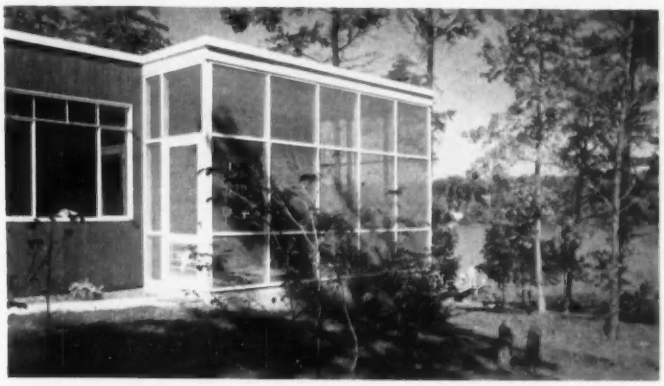
Residence of
Mr. and Mrs. Millard W. Rice
Lake Bancroft
Fairfax County, Virginia

Harry E. Ormston
Architect

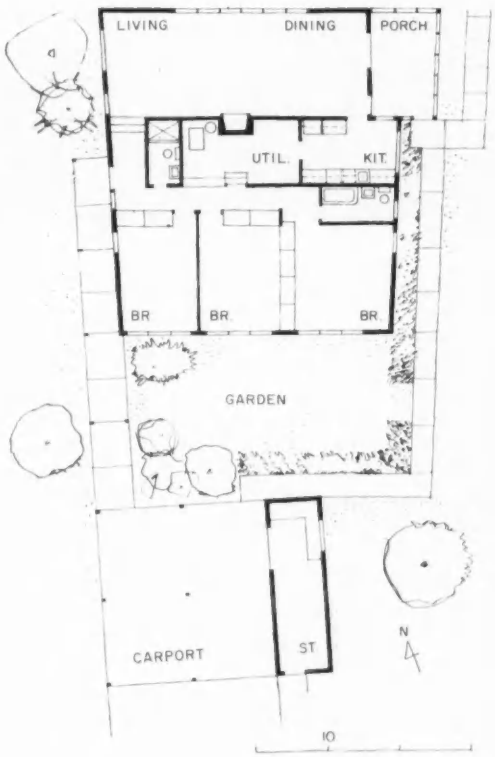
Harry Davis
Contractor







Covered walkway leads from carport along landscaped court to entrance conveniently placed between living and bedroom areas. Porch, on opposite side of house, seems small in photo at right, but actually is fairly large (see plan below). Fireplace in living room is effectively severe, raised above floor level, and framed in marble. All metal casements and fixed glass are set in 2 by 6 frames; roof is built-up with marble chip surface; heating is hot water radiant floor panel. Carport has large storage area and workshop



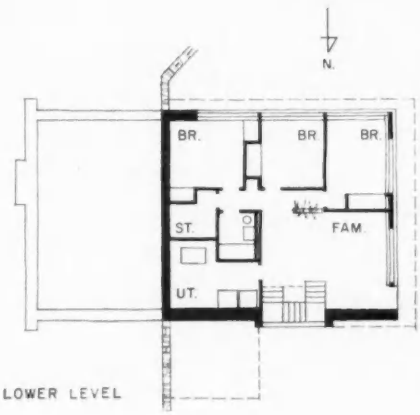
Robert C. Lautman

CLOSE INTEGRATION OF HOUSE WITH SITE

Residence of Mr. and Mrs. Albert Preston Moore, Greenwich, Connecticut
Albert Preston Moore, Architect; Russell Myers, Landscape Architect

The close integration of this house with its site is obvious in the photo above. The site—typical of New England—is undulating and heavily wooded, interspersed with streams and bare rocks. A two-level house was almost literally built into it, with exterior walls of rough stone and unfinished cypress to blend with the surroundings; the six-acre property was left in its natural state except for the conversion of a swamp into a pool and the necessary clearing for buiding site and access road.

The two levels of the house were planned to give a general feeling of openness along with a definite zoning of activities: the upper level is for the adults, the lower one for the children. A deck of wood slats cantilevers in front of the entrance close to grade, giving direct access to living room, kitchen and master bedroom suite as well as to stairs down to the children's bedrooms and playroom, storage and utility rooms and wine cellar.



North and south walls of living room are sliding glass doors; east wall is 18-in.-thick fieldstone incorporating a large fireplace; floors in this area are a gray-green slate extending into the existing rocks outside. Kitchen and baths on both levels form a central core for plumbing and mechanical ventilation with the upper rooms having skylights of plastic domes. Heating is by radiant panels divided into three zones—living room floor, second level ceiling and lower level floor. The kitchen is equipped with built-in refrigerator, freezer, ovens, range, dishwasher, and disposal sink. Furnishings blend Italian and Oriental, new and old, with designs by Gio Ponti and George Nakashima as well as ancient Japanese silk screens and Chinese wrought iron grilles. Walnut furniture, brown fieldstone and natural graying cypress contrast with clear plate glass, white plaster, black wrought iron, and the aluminum window frames

© Ezra Stoller

Close Integration of House with Site

Pond, now pleasant part of estate, formerly was a swamp; it was one of few alterations to original site. "Floating" staircase of oak treads connect adults' level with that of children; lower level contains three bedrooms and bath, plus large playroom with direct access to outdoor play area. Storage and utility rooms are also on lower level along with wine cellar carved into rock under living area. Wood framing of roof and second floor are identical post and beam construction based on a 4½-ft module; exterior materials—local fieldstone and natural unfinished cypress—are used also on interior walls. Roof is 4-ply built-up and white gravel; overhangs protect all windows and doors from sun and weather

BOLD FORMS CONTROL LIGHT IN PROTESTANT CHURCH

OWNER: *Faith United Protestant Church*

LOCATION: *Park Forest, Illinois*

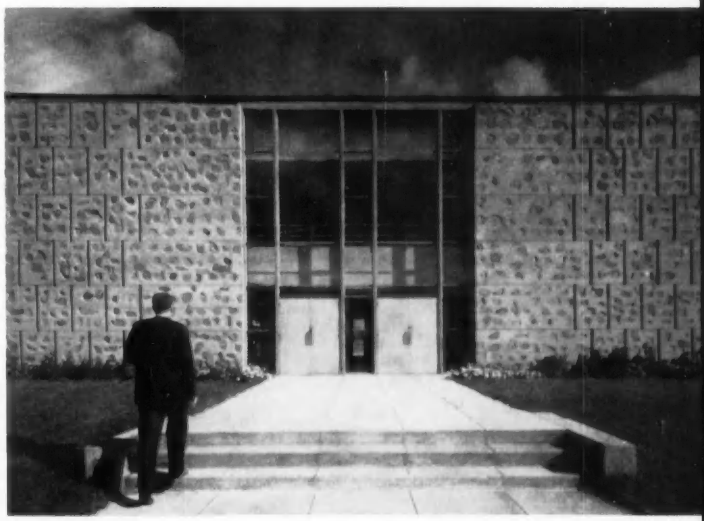
ARCHITECTS: *Schweikher, Elting and Bennett*

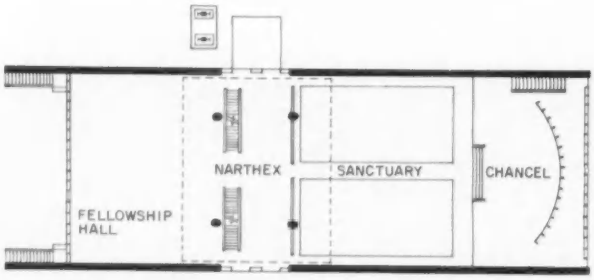
STRUCTURAL ENGINEER: *Frank Klein*

MECHANICAL ENGINEERS: *Samuel R. Lewis and Associates*

CONTRACTOR: *E. W. Sproul Construction Co.*

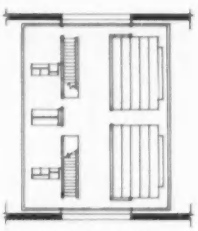
DESIGNER OF REREDOS SCREEN: *Angelo Testa*



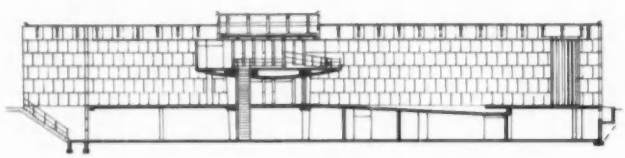


FIRST FLOOR PLAN 20

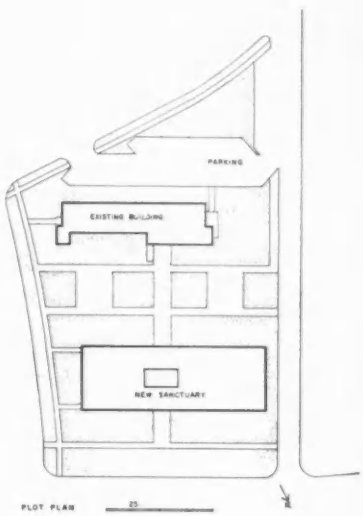
Right: reredos screen is of laminated plastic wrapped around wooden ribs which are fastened to 3-in.-by-7-in. rectangular pipe columns extending from floor to ceiling. Circles are translucent plastic disks in many brilliant colors set in a black background



BALCONY PLAN



SECTION



PLOT PLAN 25

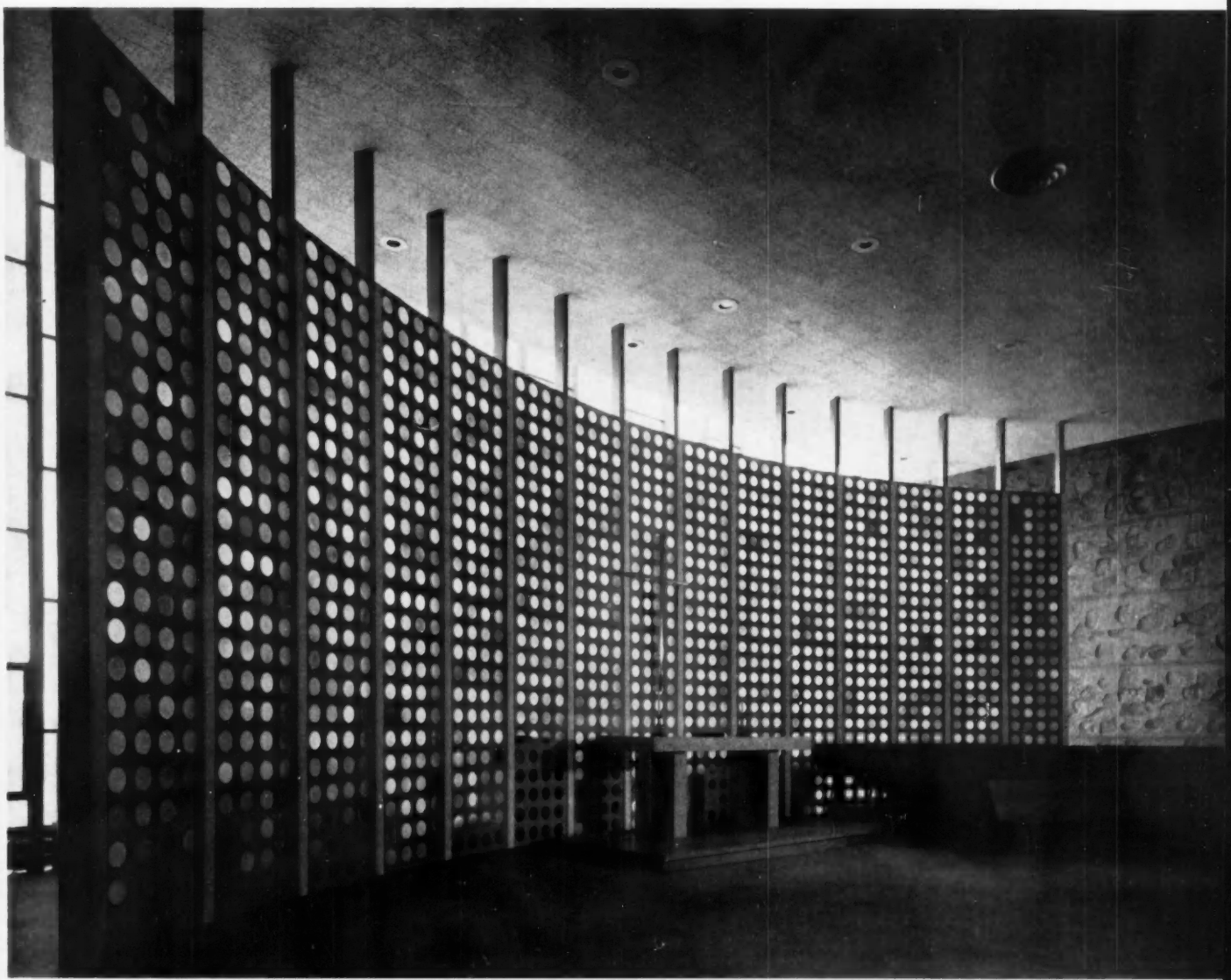
The outward form of this church could not be more simple and direct. It is a box relieved by the broad projection of the roof and walls beyond the large window of the fellowship hall, and by the two-story entrance elements which interrupt the otherwise continuous surfaces on opposite sides of the building. There is much that is complex and subtle, however, in the use of materials and in the handling of light and shade in the interior. Both end walls are fully glazed. The walls which parallel the main axis are of reinforced stone concrete. The use of granite in varying shades of red, blue and gray in combination with the rough concrete provides very rich exterior and interior surfaces. These walls are perforated by narrow and deep vertical slots with clear glazing and have been designed to admit patterns of light which contrast in shape and general intensity with the more brilliant illumination admitted to the chancel through the circles of the reredos.

The fellowship hall is separated from the sanctuary by a strongly conceived reinforced concrete structure. Its four piers define the narthex and support a balcony which contains additional seating and offices.

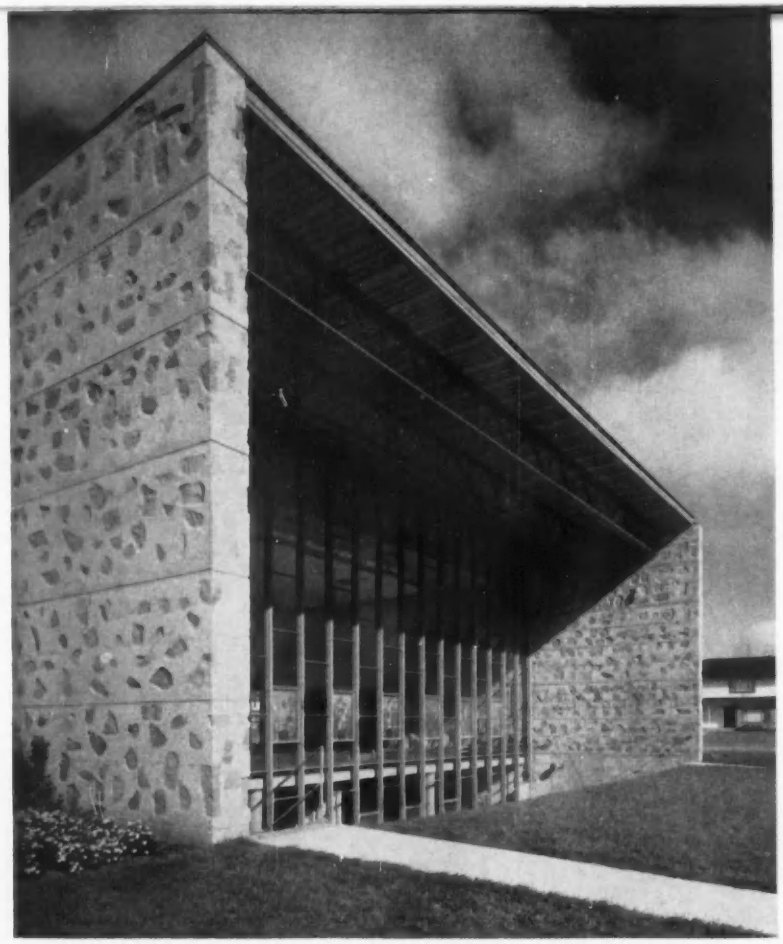
A Sunday school was built first on the site by the architects and will eventually be connected to the church by a covered walk. Terracing, planting and a bell tower will be added in the future.

Sunday School

Faith United Protestant Church



Faith United Protestant Church



Roof is steel deck on long span joists. Ground slopes downward sharply where stairs lead to a general purpose and dining room in the basement. Glazing extends from basement floor to fellowship hall ceiling

Entrance from narthex to sanctuary is at the left between balcony piers

All Photos: Bill Hedrich, Hedrich-Blessing

NEWSPAPER PLANT AND OFFICE ON A RIVERSIDE

Miami Daily News, Inc., Miami, Florida

Weed Russell Johnson Associates
Architects-Engineers

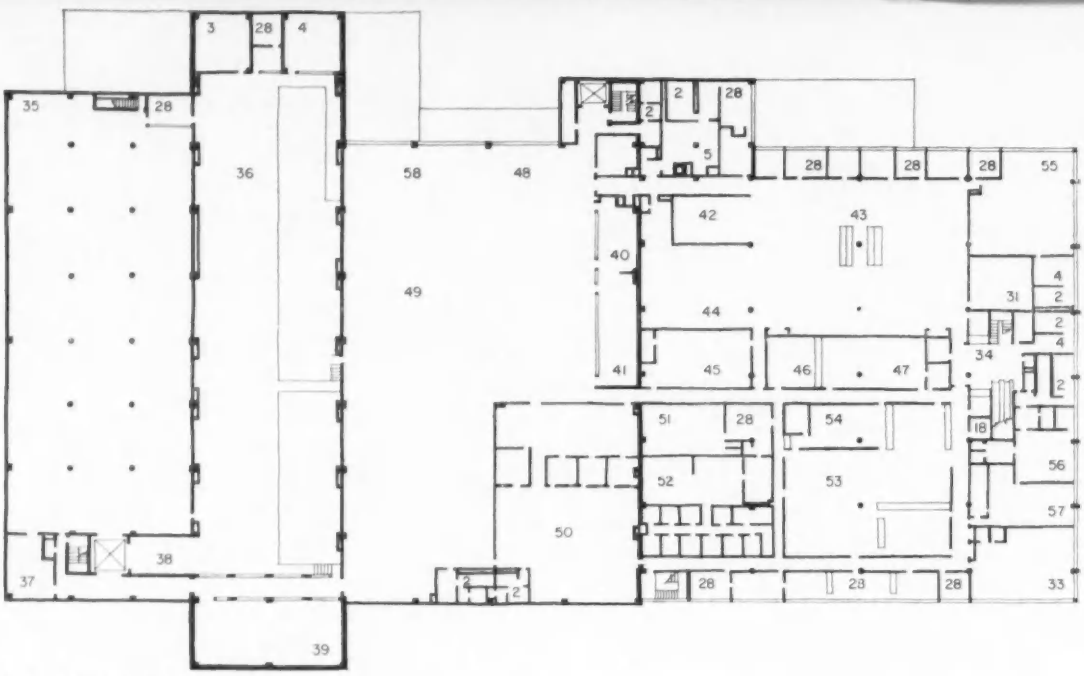
Jorgen & Schreffler, Structural Engineers

Rader & Associates, Mechanical Engineers

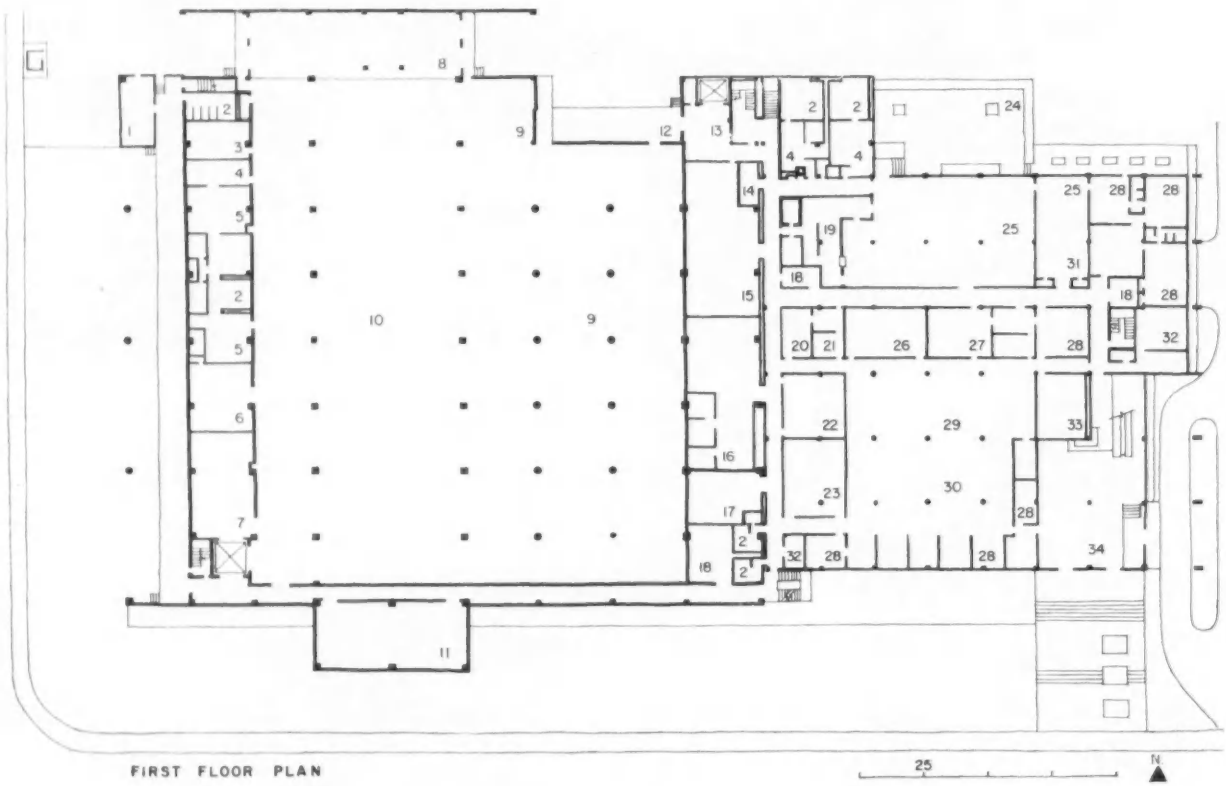
The Wagner-Smith Company
Consulting Electrical Engineers

Barbara Dorn Associates, Interior Designers

C. F. Wheeler, Builder, Inc., Contractors



SECOND FLOOR PLAN



FIRST FLOOR PLAN

1. Dispatch Office
2. Toilet
3. Ink Storage
4. Lounge
5. Locker Room
6. Electrical Shop
7. Machine Shop
8. Paper Receiving
9. Paper Storage
10. Reel Room
11. Press Panel Room
12. Receiving Dock
13. Receiving Lobby
14. Incinerator
15. Stock
16. Job Printing
17. Building Maintenance
18. Air Conditioning
19. Kitchen
20. Purchasing
21. Personnel
22. Unassigned Area
23. District Manager
24. Garden Terrace
25. Dining
26. Payroll
27. Bookkeeping
28. Office
29. Credit Office
30. Circulation Department
31. Meeting Room
32. Telephone Equipment
33. Library
34. Lobby
35. Mail Room
36. Press Room
37. Storage
38. Bridge
39. Press Control
40. Proofreading
41. Teletype
42. Promotion
43. Advertising
44. Dispatch
45. Art
46. Amusements
47. Page Office
48. Monotype
49. Composition
50. Engraving
51. Studio
52. Print Room
53. Editorial Office
54. Sports
55. Phone Room
56. Wire Photo
57. Associated Press
58. Machine Room

Newspaper Plant and Office

The building provides complete facilities for the plant and offices of the newspaper. It is located on a six-acre waterfront site on the Miami River, a few blocks from the center of the city's business district. The location was chosen, not only for its natural beauty and ample size, but also for the relative ease of receiving and shipping by truck at this site. An added value is the future possibility of moving newsprint by barge on the river.

A major requirement for the building was the provision of approximately twice the usable space available in the old News Tower formerly occupied. This space requirement was predicated on the desire of the owners to have the new facilities adequate for the future publishing of a newspaper for a city of 1.5 million (about twice the present population of Miami).

Perhaps the most important problem which faced the architects was the owners' desire to have the building designed around an efficient production flow. What they wanted was a "production rhythm" within all operations of the paper and between the individual departmental operations. To achieve this, the primary functions were divided into three main types: offices, composing-stereotype area, and press-mail room area. Study of the production flow proceeded for several months as a joint architect-owner venture, before preliminary design was undertaken.

The flow patterns finally agreed upon and incorporated into the building design are generally as follows: 1. Editorial copy, photographs, and other artwork are prepared in the editorial section and related areas. Advertising copy is prepared (also sold) in the advertising section. 2. Copy is sent via overhead message conveyors to the composing room. Text stories are set into tape and run through typesetting machines. Other copy is set into type in adjoining areas. Photographs and artwork are etched into plates in the engraving section. 3. From composing and engraving, set pages are sent to stereotype area, where impressions are made on fiber mats. Molten metal is poured on these to produce curved plates for the presses. 4. Finished plates are transferred by conveyors to the two-story press room for the actual printing of the newspapers. The automatic press units feed newsprint from the reel room directly below, print the papers, cut them, and partially assemble the pages. After use, the plates are sent by conveyor to a furnace located below stereotype area. Here they are remelted and the molten metal piped back to stereotype area to be stored in pots ready for immediate reuse. 5. From the presses, the finished papers are delivered by overhead folder conveyors to the mail room. Assembly is completed, papers are automatically tied into bundles, and these are dropped in chutes to the loading dock below.

The structure of the building is reinforced concrete frame throughout except for the composing room area which has an 85-ft trussed steel roof for maximum flexibility of equipment layout. Office exteriors are finished with anodized aluminum curtain walls; production area exterior has precast concrete panels (with exposed aggregate), except large enclosed press area which is of brick for contrast

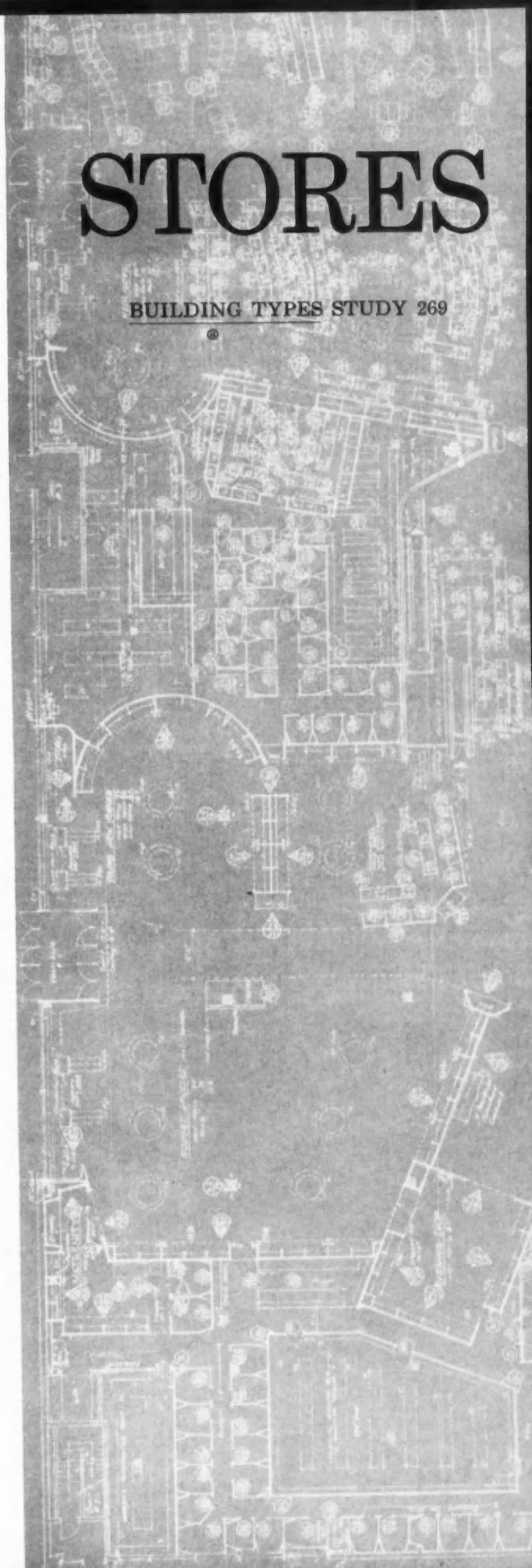
Office areas are generally open and planned for flexibility, with simple, unobtrusive materials and colors. Some areas have wood-paneled walls, others only metal railing dividers for informal separation of various spaces. The entire building is air conditioned, including the press room which has special filters to clean the ink-laden air. Lighting is generally incandescent except press room has mercury-vapor type

Newspaper Plant and Office

The Miami Daily News is an outgrowth of the Miami Metropolis, a weekly newspaper founded in 1896 (before Miami officially became a town). In 1923, James M. Cox, three-term governor of Ohio, acquired the paper and gave it the present name. At that time, he issued a statement of the newspaper's publishing creed: "A newspaper should be mindful at all times of its opportunity for service. It is no more infallible than man. It should be quick to repair injury; it should be courageous, express opinions with proper respect for the views of others, and never permit the elements of selfish purpose, untruth, or injustice to pollute its facilities of information." In order to supply the proper physical setting for the achievement of the purposes he expressed, Gov. Cox built the News Tower on Biscayne Boulevard in Miami. Here, the newspaper was published until the needs for expansion and modernization of the publishing process led to the construction of the new riverside plant and offices. Under the guidance of James M. Cox, Jr., the newspaper continues its growth and service. Of the new building, the owners say: "It's the best newspaper plant in the world. There are bigger operations, but none better or more efficient"

STORES

BUILDING TYPES STUDY 269



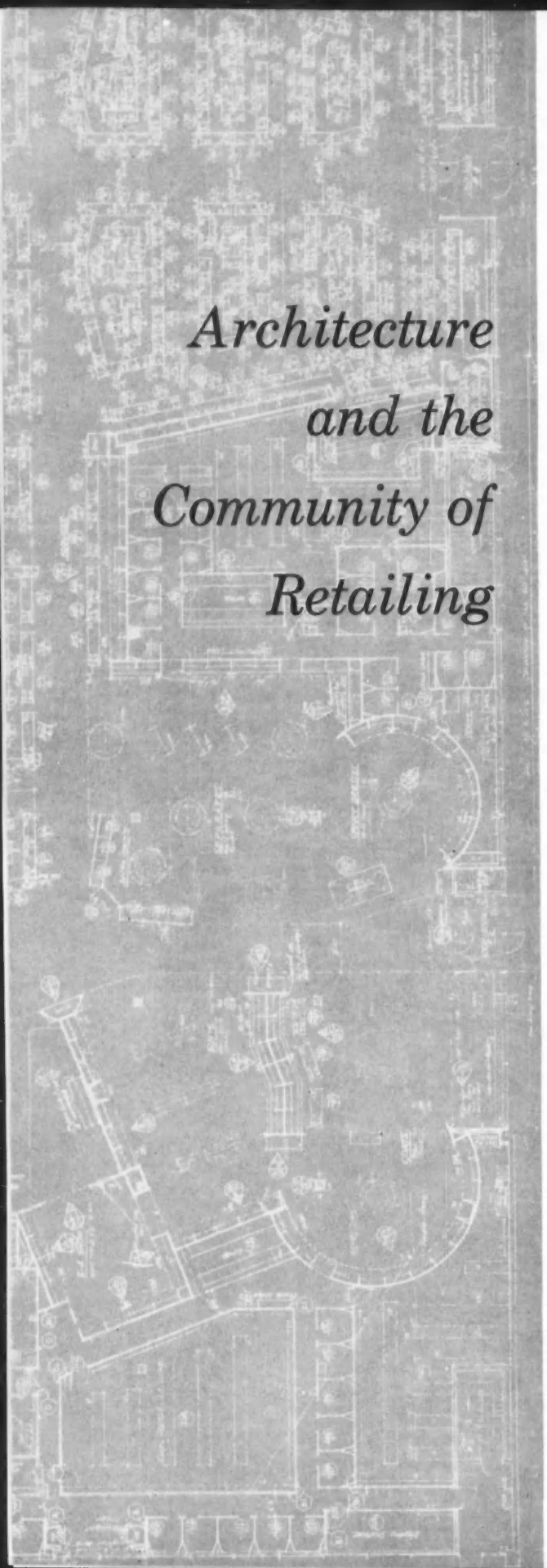
Stores Are For Merchandising

A store—the most commercial of commercial buildings—must be conceived, arranged, and designed to sell goods; and if it fails in this requirement, has no reason to exist. The fact that a store is built to make money in no wise precludes the possibility that it can also be well designed architecturally. Contrawise, one can hardly expect a perfect gem of a store design to entice visitors into buying merchandise on the basis of esthetic appeal alone. The ultimate store, as the girl who has beauty *and* brains, will combine both qualities.

Facing these facts, the architect can benefit from some knowledge of the nature of retailing, and of how merchandising principles and practices can influence—and sometimes determine—the location and design of retail establishments. Our study therefore features a nine page discussion of this interrelationship.

A group of seven stores follows the text, and each of these has something to say about either the design or operation of stores. There is a department store branch with an unusual servicing arrangement; two handsome remodeling jobs that achieve distinctive retailing atmosphere; an example of how architect and graphic designer can work together to sell goods; a proposed store in the sub-tropics with a precast concrete façade-screen; and a pair of attractive bottle shops for the thirsty!

JAMES S. HORNBECK



Architecture and the Community of Retailing

How Merchandising Principles Affect Store Design And Location —And Vice Versa

*by William T. Snaith**

THE NATURE OF RETAILING

To design a store—any kind of store—one must visualize a complex and dramatic exhibition combined with the most efficient and workmanlike of warehouses. Add to this diverse pair the knowledge that from hour to hour through any typical day both exhibit and warehouse must be raided and replenished without any obvious public dislocation of the main show. Further, for every type of retail enterprise there is a unique, appropriate solution in building design, interior arrangement, and interior design.

Retailing is a large community, and is neither static nor well-mannered. Within this community the keenest competition exists, and there are no rules to limit the amount of ingenuity, energy, or money any retailer may expend, or to govern the manner in which he may employ them.

There are two extremes of retailing in this community. First, the retailers who sell merchandise by projecting their own personalities; second, the retailers who, in effect, act as distributors of manufacturers' goods and personalities. This is the basic cleavage, and every type in between is a shading of one extreme or the other. The extreme example of the store that sells its own personality is the specialty shop (Tiffany, Sulka). Here, fashion is sold with or without the maker's label—often under the shop's own label. The other extreme is the supermarket shelf displaying dry groceries and drugs,

*Architect Snaith is president of the Raymond Loewy Corporation, and qualifies—through years of study and experience—as an expert in the field of merchandising as it influences store design. In this capacity he has served as a consultant to Lord & Taylor, Stewart's, Foley's, Rich's, Filene's, J. L. Hudson, and many others.

The total impression of fashion store: air of spaciousness; elegant fixtures; off-white, gold, sepia, bronze, sand carpet, pink marble. The J. W. Robinson Store, Beverly Hills, Cal.

Julius Shulman

where items are selected on the basis of the manufacturer's name and reputation. Such shelves are simply convenient pick-up points for wanted or convenience goods. Approximately 200 billion, 2 million dollars worth of goods are sold yearly in the United States. The solutions for receiving, handling, housing, and displaying this vast quantity of merchandise cannot follow similar principles in each case; the *character* of the particular store must be a basic design determinant.

Currently, the problem of store design is complicated by a very real revolution in total distribution. There is increasingly less distinction in merchandise itself, while the desire and means to acquire goods is growing. People want more of everything; and they want to derive status from their possessions. As retailing reaches the point where there are many places to buy like goods; when advertising encounters increasing difficulty in conveying impressions of differences in merchandise; then the store itself becomes a potent factor for buying in one place rather than another. The skill of a designer is demonstrated in the successful interpretation of a store's special character. It is not demonstrated in an esthetic architectural statement, although this possibility is not ruled out.

An interesting peculiarity of current retailing: two kinds of stores at the extreme of selling for price—the supermarket and the discount house—are being forced to explore the potential of establishing personality and offering some service. Price alone is no longer the compelling incentive it once was; the competitive advantage of these stores is waning.

We shall discuss the effect of a building's design on a retail enterprise. Briefly, these are the main factors involved: geographical location; use of site; interior relationships of operating elements; type of merchandise; exterior and interior atmosphere which projects the store's character. For clarity, the subject will be confined to new buildings. Although modernization is a vast field, the limitations of an existing plant automatically control planning, and improvisation is employed rather than principles of store planning in their most ideal application.

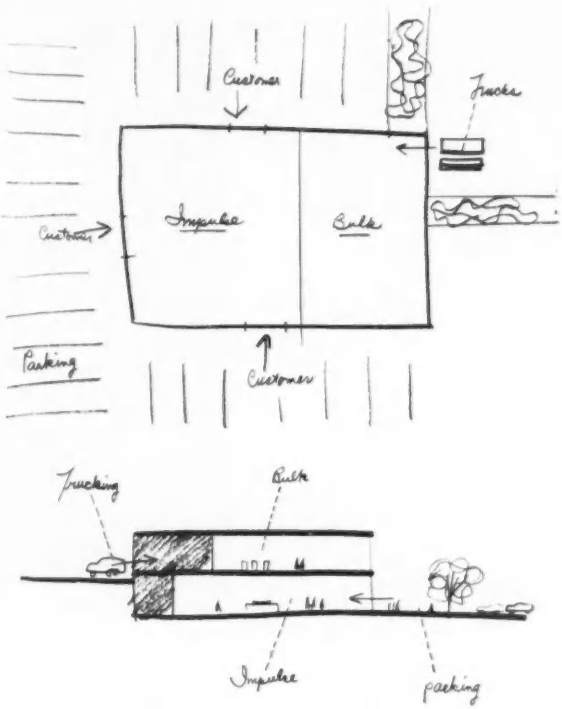
GEOGRAPHICAL LOCATION

Most new retail building is suburban and of two kinds: branch stores in developing residential communities, or units in shopping centers. As a planning exercise, let us analyze the branch unit of a downtown department store, for in no other enterprise are all the design skills so rigorously demanded or so directly measured against profit. New downtown stores are rare, and their locations depend more on possibility than on choice.

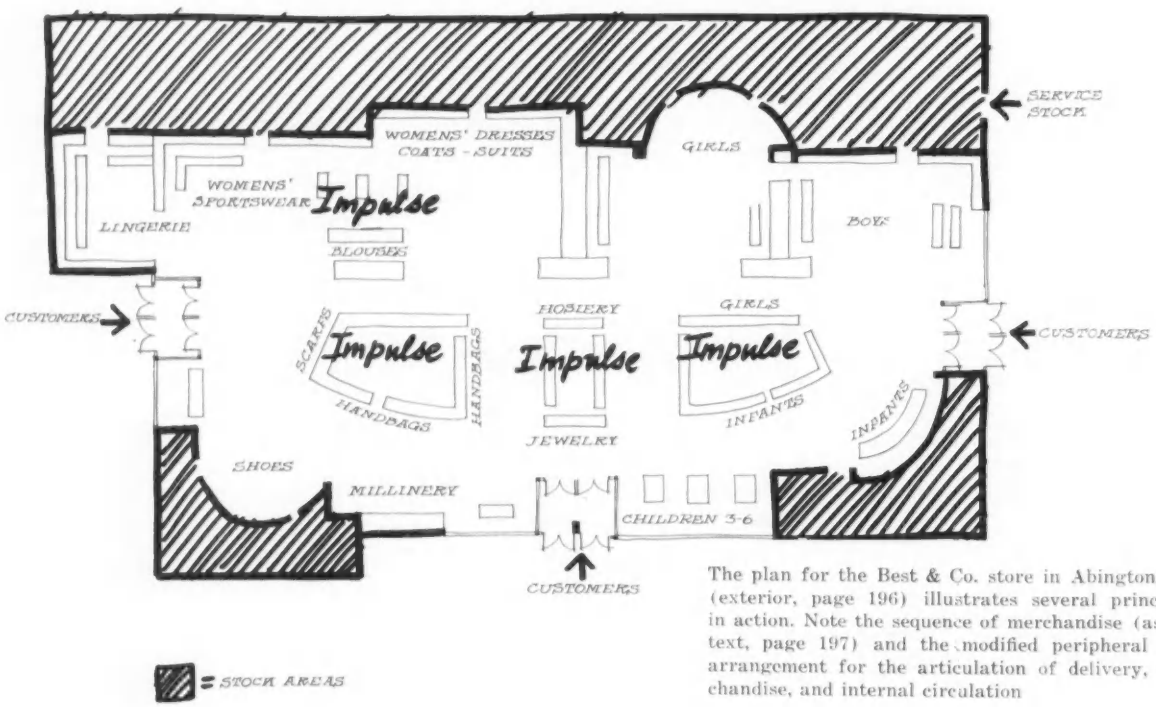
In order to appreciate the problem of locating a branch, it is necessary to understand the nature and strengths of a complete department store downtown. This powerful retailing instrument: 1, is located in the major traffic area; 2, is important in the downtown community; 3, is a place in which to look and learn and buy rather than one where only convenience goods are available; 4, offers the widest assortment of merchandise under one roof of any type of retailing outlet; 5, has resources and organization that enable it to buy better than other types

Weiner Aerophoto Service

Two examples of two-level parking. At top, parking adjacent three separate entrances; bottom, the split-level plan arranged so the strips in front are filled first, giving the center an active look. Overflow parking in both cases is at the rear. Top: Lord & Taylor, Milburn, New Jersey. Bottom: Stewart's, Baltimore, Md.



Sketches to show proper interrelationship of trucking, bulk and impulse merchandise, entrances, and parking. The plan is for a single level arrangement; the section relates these elements in split-level fashion for a sloping plot or one that can be adapted to a two-level scheme



The plan for the Best & Co. store in Abington, Pa. (exterior, page 196) illustrates several principles in action. Note the sequence of merchandise (as per text, page 197) and the modified peripheral plan arrangement for the articulation of delivery, merchandise, and internal circulation

of retail stores; 6, has prestige in name and manner of selling; 7, represents community interest beyond the sale of goods; 8, offers service, deliveries, charge accounts, guarantees, returns, repairs, food, facilities, etc.; 9, arbitrates fashion, insuring taste and acceptance for its customers; 10, is a central base for marketing tests; 11, is the focal point for advertising and public relations interpreting the store's special character. This is the highly developed organism which now seeks new outlets to serve its customers closer to home.

The leading department store in a given city runs the greatest chance of injuring its downtown business by branches; the second and third stores have less to fear. But location choice is based—emphatically—on analyzing the position of the proposed store and downtown store in relation to what it considers its total potential. There are two possible locations: close to the city where the branch taps existing customers, or further out where there are new customers. A branch cannot go too far from the main store because the store's range of influence is limited by custom and knowledge. Records of charge accounts and deliveries tell a store where it is doing business. Branch locations are sought:

1. In areas where people are not being served.
2. Where defense against competition is needed.
3. In a new area which is not being served.
4. In a satellite town in case the store's reputation will be able to carry across a wide gap. Bloomingdale's is successful in Stamford; L. S. Ayres of Indianapolis does well in Lafayette; Rich's of Atlanta prospers in Knoxville.

Other factors are physical. Consider accessibility. Although thousands of cars may pass every hour, high speed, limited access roads hardly provide the kind of traffic that will stop to shop. The rules of retailing never change: can customers get to the store? can they stop? can they see the store? Besides accessibility, land must be available in the right place and priced fairly. Obviously, zoning laws must be favorable or changeable.

USE OF THE SITE

Accessibility from the road is the first factor in deciding how to use the site. Next, topography will influence the kind of building, the number of floors, the levels of parking. These will, in turn, determine the kinds of merchandise within the store. Contrary to every traditional architectural dictum that building design is conditioned by the land, no store site must be able to dictate a bad positioning of the building in terms of retailing. Rather, the topography might be changed to achieve a proper entrance or to locate services to work with inside operation. If the site cannot be accommodated to store requirements it must be rejected, however beautiful for esthetic reasons.

PARKING is a prime factor in site use. The store must decide whether it is better to show extensive parking or to show the store itself. The accepted size for parking facilities is based on shopping population. We allow 4 sq ft of parking to one of store. However, the distribution of required area into lots or into a front or rear plaza depends upon the impression the store wants to convey. I like a large parking area less than lots distributed about the store, since a lot is filled only at peak hours. An empty lot gives a not-so-busy impression, which is not good.

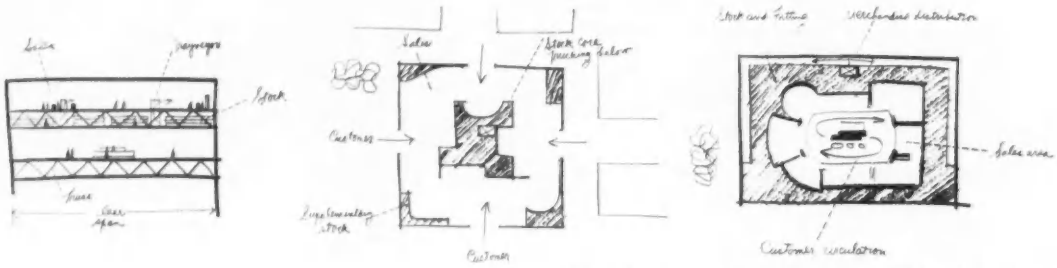
PLACEMENT OF THE BUILDING. There is no absolute front for a branch store. Fronts are regarded as facing on streets, or traffic. Instead, consider a branch store as having two "fronts:" one that a customer sees in passing or arriving, the other he sees when he actually enters. Topography may or may not dictate the location of auxiliary services, but such services must back up into merchandise within the store. When one knows where the trucks arrive, he has automatically determined the location of certain departments. These are: bulk goods (furniture, rugs, appliances, etc.); and fragile goods (china, glass, lamps, etc.) which ask for the least amount of handling.

Note that the conventional ideas of locating a building on a site cannot always be applied to stores, for when the truck approach is determined, the location of certain merchandise also is. If, for other reasons, merchandise location is determined first, then there is an enforced location for trucking. We more often create sites than accommodate to them; not arbitrarily, but for very sound merchandising reasons. The designer must determine where the greatest number of customers will arrive, and will then know the level and entrance at which to place impulse merchandise—as we will see later.

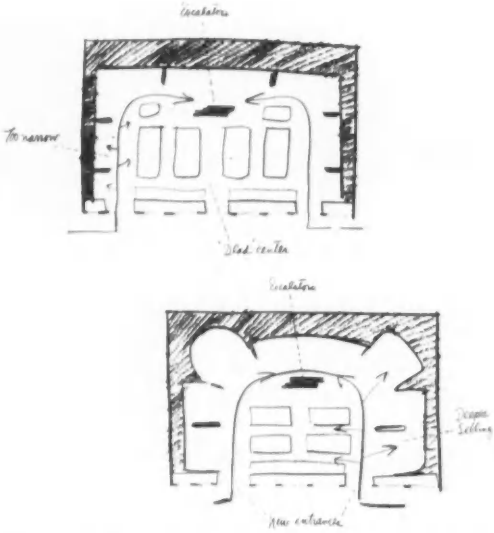
SPACE PLANNING

As acutal drawing begins, two major principles are carried in tandem: how the building operates most efficiently, and how it addresses itself to the customer. How does a store address a customer? It conveys an impression of a fashion store (Lord & Taylor), an institution (Lazarus, Columbus), or a store with maximum stock (Gimbels, New York). Many of the great department stores try to do all three, but a single impression usually prevails. We can explain this only by explaining the retailer himself. He is an individualist; he knows how to sell (and does so almost automatically) in one merchandising category better than others, or in one price range, or by one promotional device. The store must address its particular customer, for no matter how intelligent the plan, how appealing the design, this retailer will be unable to do *his* kind of business without *his* kind of store.

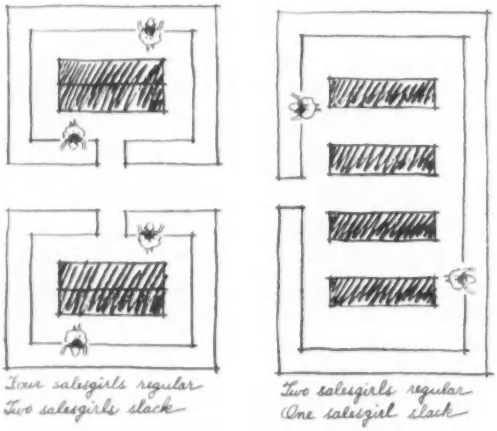
Next, a store addresses itself to the customer by the manner in which it presents merchandise; and finally, by the sequence of its merchandise.



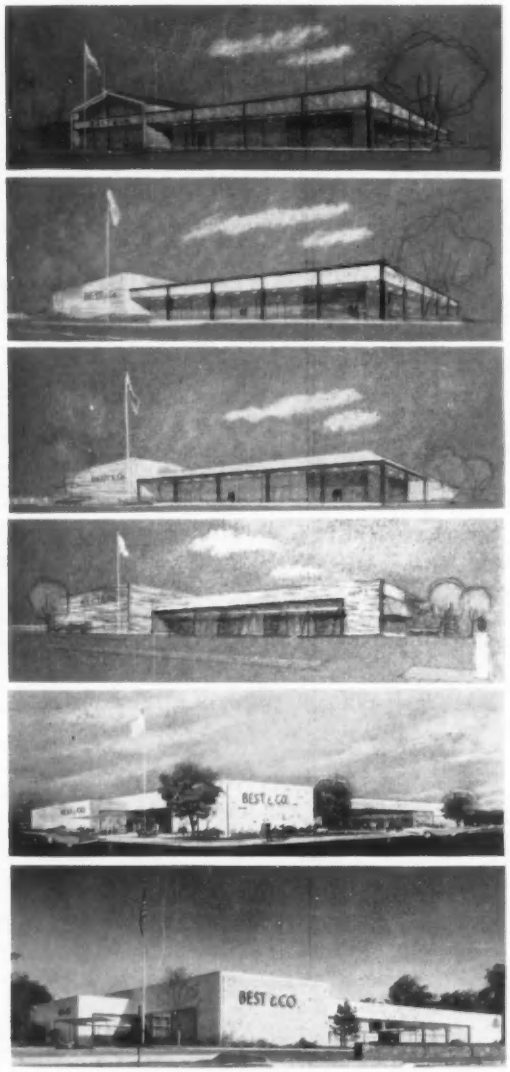
The three sketches above illustrate the three basic arrangements of service and circulation. At left, the sandwich scheme; center, the internal service core; right, the peripheral service belt with central customer circulation. See text at right



Above, an unfortunate (top) and improved (bottom) diagram-plan for the placement of entrances and their working relationship with internal circulation, as well as the size and shape of selling areas in conjunction with both



"Station selling consists of an island; customer outside, salesgirl inside. Two islands mean two girls—or more often four, since two sides must be watched and served." One island performs for two in the sketch above



Gottscho-Schleisner

A series of sketches showing exterior design development for Best & Co. in Abington, Pa. Early ideas of peaked roof and overhangs were discarded in favor of more economical canvas marquee shelters. Fieldstone ties in with the domestic architecture typical of this predominantly residential section

ORDER OF MERCHANDISE. Merchandise has a descending order of importance according to frequency of sale and relationship to total impression. First is impulse merchandise, that which is in constant demand and which attracts customers simply by visual or tactile contact. In a department store the items most frequently in demand are smallwares (gift items) or fashion accessories (jewelry, handbags, cosmetics). Next, in terms of placement, is merchandise which gives the impression the store wants to create. Without exception, there is a relationship between this and the impulse merchandise. Here are accessories and fashion apparel augmenting the impulse items (millinery, shoes, sportswear, others). In descending order is the traditional or expected merchandise of a department store, such as stationery, men's furnishing, notions, etc., which rounds out the impression of a total department store. The retailer may want to capitalize on two impressions (fashion and institutional), and if so, he can create two levels, giving each floor its own character. (First floor fashion—Rich's, Knoxville; institutional impression—Gimbel's first floor.)

There is also an order of merchandise imposed by operation. Handling goods spells the difference between an expensive and an inexpensive operation. Reducing the number of handlings increases profit. Most expensive to handle is bulk or fragile merchandise—a determinant in locating delivery approaches, as mentioned earlier.

The third decisive factor is the very nature of a branch store, which is a reduced representation of the downtown store. Thus, if the city store has built a reputation for housewares, there must be a prominent housewares department in the branch, for customers will expect it. There cannot be a difference between downtown store and branch—compression must not destroy essential character. Nor can the planner reproduce a miniature downtown store based on percentages, for some departments would be ridiculously small. Here, statistical analyses break down, and local demands must govern.

If you can't have everything: 1, cut out merchandise having low frequency of sales and low profitability; 2, cut out departments the community will not support, or which—for geographical reasons—are difficult or expensive to stock.

SERVICES comprise: 1, stock to back up a department; 2, sale consummation (taking cash, writing charges, keeping records, packing, delivery); 3, administration; 4, sales personnel. Every store devotes from 25 to 40 per cent of its space, including stairs, boiler room, etc., to such functions.

The size and shape of a department may reduce operating costs and enable the store to offer its best service with fewer sales persons—a major expense item. Station selling consists of an island; customer outside, salesgirl inside. Two islands mean two girls —or more often four, since two sides must be watched and served. If the designer wants to cut personnel by eliminating islands, then he must note that over-elongated shapes, or those that turn (making it optically impossible for a single person to control an area) are undesirable.

CIRCULATION of two types, horizontal and vertical, must perform for both service and customer. Though one elevator penthouse for both would be cheaper, we never hesitate to build two, since a better functional relationship outweighs installation cost.

There are three ways to locate service areas in relation to circulation: 1, sandwich service; 2, internal service; and 3, peripheral service. I know of only one example of the "sandwich" service floor—the May Co. in St. Louis. Of the internal service type, the most outstanding is the J. L. Hudson branch at Northland.

All things considered, the peripheral arrangement is best. It gives separate shop distinction to each department and offers the visual impression of a total floor. The central service block offers only separation by shop, while the peripheral plan allows both. No one has yet built a sandwich floor arrangement that achieves both objectives. The peripheral plan produces the following situation: customer circulation is centralized and also spreads out, while service circulation comes from outside in, and the two types never cross. With circulation decided, site use is reconsidered.

ENTRANCES are located to provide maximum exposure of high impulse merchandise, supported by sufficient surrounding area so departments function well; and proper relationship to most of the parking area.

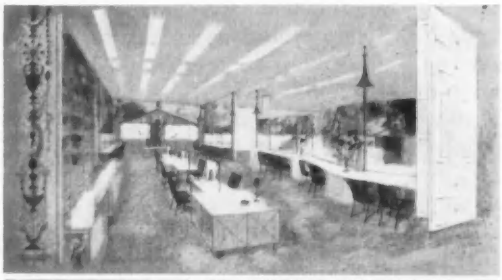
By presenting considerations in the wrong order—site before space planning—we see clearly the essential difference in the approach of a store planner and the traditional architectural one. The building has not been located on the site until inside space arrangement has been crystallized.

ALLOCATION OF DEPARTMENTS. Two factors affect department allocation: 1, size; and 2, relationship with other departments on the basis of goods, character, and service. Certain departments might be related because of use association, total impact impression, or price association.

In any consideration of space allocation the designer must also recognize that there are seasonal peaks in all selling. 20 per cent of total volume is done in December. So, in the allocation and association of departments one must consider how they complement one another during peak season. Coats and suits and sportswear departments must be designed so they can capitalize on the sale of bathing suits and active sportswear when the weather changes. Toys and summer furniture departments are usually related, because both are bulky stocks, highly seasonal in appeal, and require comparable space.

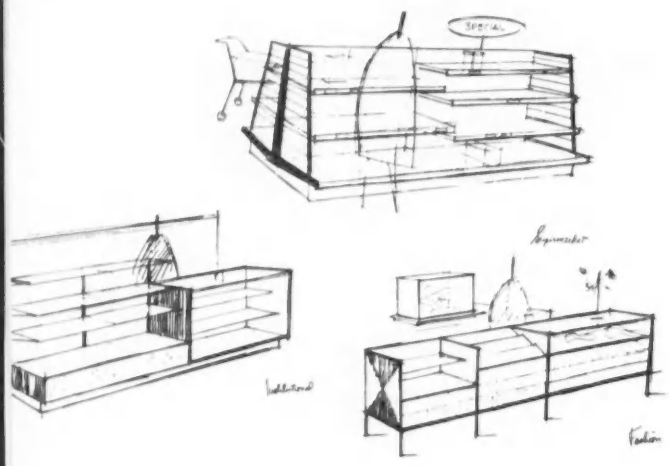
Gard

In a shopping center, the branch department store should stand apart visually. Above, Halle Bros. in Westgate, Ohio, is made distinctive by peaked roof, white brick, and decorative black iron medallion



Gottscho-Schleisner

Above, the designer's rendering for a department and a photo of the department. The object is to project the total store image or character to the customer; the kind of merchandise, the way it is sold, the type of customer, the store itself in relation to others handling like merchandise



"In fixture design we must seek some comfortable median between turning the store into a supermarket (maximum self-service) or a salon, where the customer is individually helped at every stage of the sale." Store character furnishes the choice

Gottscho-Schleisner

Below, the plain background; *immediate right*, two examples of the decorated background. Snaith says, "Presentation, setting, background lend value and glamour to stock; enhance it, interpret its taste level, say something positive about it. Decoration has proved to be the best possible way to stimulate sales of all kinds of merchandise . . . whether or not the goods themselves have high fashion appeal."

Julius Shulman

EXTERIOR CHARACTER

In wrapping a building around the plan, we must consider esthetics, of course, but we must also be ruled by budget and cost of maintenance. A store is the most commercial of commercial buildings, and building cost appears as "cost of operation" under the heading "occupancy." Maintenance cost appears in the same column of the same ledger.

There are implied operational hazards in certain treatments. Unfortunately, the glass wall is an enemy of merchandising. It is virtually impossible to display against it—light cannot be controlled. The glass wall imposes a costly maintenance factor, for the outside view changes constantly according to what is happening inside. Yet we like glass areas, and therefore use them where they penalize us least. Daylight does accent interior lighting; breaks the monotony of masonry expanses. For these reasons, certain departments can be located to provide an interesting façade. The glass wall is appropriate for restaurant, employe, and office areas. Only two types of sales operations can live under glass: those wherein the merchandise itself has decorative value, as gifts; or those not requiring exposed stock, as a salon, which sells only by atmosphere and total image.

The exterior should project several images: 1, size (because the department store should say, visually, it is the strongest purveyor of goods in the area); 2, permanence and institutionality (to instill a sense of trust and dependability); 3, definition from its neighbors (restrained if nearby buildings are flashy, etc.); 4, the nature of merchandise and customer (where one finds ideas, stimulation, taste); 5, store character (high fashion, graceful, fine in scale—institutional, solid, no nonsense); 6, regional or community character. Unless the store reflects the community, it may never get built. Exterior character as much as store reputation will make a design acceptable locally.

INTERIOR CHARACTER

When we come to interior treatment, we emphasize —by every device—the projection of the total store image. That character or image, as we have seen, is a composite of the store's merchandise, its way of doing business, its customer, its position in relation to all other merchants handling like merchandise.

Inside the store the projection of this image is accomplished through display. "Display" in this sense has the broad meaning of showing merchandise against controlled backgrounds that enhance and facilitate selling—not narrowed to mean the art of dressing windows, draping apparel on mannequins, or arranging counter top eye-catchers.

FIXTURES are the basis of display, and their location, type, and design establishes character and enables the store to operate within its own peculiar method of merchandising.

INSIDE TIPS

1. Never put a fur department near a stairway or escalator or entrance. The annual loss from stolen goods is calculated and estimated and entered as a cost of operation.

2. Place impulse items at the foot of "down" electric stairs. With his purchase completed upstairs, the captive customer's vision is now forced downward, and she is liable to buy impulse merchandise on the way out.

3. A restaurant is almost mandatory in a branch store. In suburban communities stores virtually empty out at lunch time. If you don't feed a customer on the premises you lose her for the day. She'll get into the bad habit of shopping around the neighborhood for the balance of the afternoon.

4. Men are not repelled by a "feminine" color scheme in a store: in branch stores men shop with women; downtown, they shop alone.

5. Beauty parlors in branch stores usually are not very profitable. The amount of revenue produced by the beauty shop is less than the revenue produced by using the space for other purposes. They take up too much space in a situation where space is limited.

Labor is a store's most expensive commodity; retailing has been described as the last of the manual industries. If we plan fixtures to reduce the amount of sales help we save in operation cost, but this reduction automatically lowers the level of presentation. In fixture design we must seek some comfortable median between turning the store into a supermarket (maximum self-selection and self-service) and a salon where the customer is individually helped at every stage of the sale. Personnel cost pushes up merchandise price, and there is a point somewhere here of no return.

In general, a floor comprises three major sections; a central section of islands and aisles, plus two sides. Smallwares or impulse items are in the central section, in which open fixtures—counter height—are combined to make islands. The sides carry merchandise requiring wall fixtures. Since our plan example is based on a peripheral stock arrangement, these departments back up into stock. We have now a picture of a store wherein the first impression is of highly visible impulse items, a long and wide general view of full stock, and inviting glimpses around the periphery of the floor of entrances to shops having individual, appropriate character.

DECORATION. Fifteen years ago, many merchants resisted the idea of a decorated, dramatically interpreted background for goods. They felt a background assertive enough to give a positive impression of fashion would overpower the merchandise. On the contrary, it has proved to be the best possible way to stimulate sales of all kinds of merchandise; and this is true whether or not the goods have high fashion appeal. Merchandise itself, item by item, is difficult to evaluate. Even expert buyers find it virtually impossible to distinguish between two unknown items (with tags removed) priced at 7.95 and 12.95!

Presentation, setting, background lend value and glamour to stock; enhance it, interpret its taste lev-

Gottscho-Schleisner

The electric stairway as a major dramatic feature. In Gimbel's Valley Stream branch, marble, glass, and special lighting are used to that end. Note the illuminated store directory

el, say something positive about it. Today, "fashion" is the most potent incentive to buy, and in a branch store fashion is the impression desired. Background can also say that merchandise is of unassailable quality, or is a good bargain, or that it's the newest. Skirts in a sportswear department are hung together—12 to the foot—and differences cannot be detected. Therefore, surroundings, fixtures, and decoration must create a feeling of quality that reassures the customer that anything in the department must be good.

Graphics can establish character directly and at little cost. Upper wall areas, valances, counter or rack ends, all provide surfaces for such treatments. Color is one of the most consciously registered indications of style, and can be introduced in graphic variations. Stained woods in color, synthetics, fabrics, paint, plaster, mirror—all can serve to introduce both color and textural change of pace.

CEILING HEIGHTS are of course determined by the size of the visible space; the larger the space the higher the ceiling—within reason. But since we want a maximum of flexibility, fixtures form interior walls. They often do not reach the ceiling, so we can save building cost by using a lower ceiling than the total space would seem to indicate. Upper air space use is affected by the optical necessities of signs, and by devices indicating shop groupings. Case top screens and dividers can indicate areas and provide additional space for decoration.

Attempts to create a sense of height by varying ceiling levels may be imperative in modernization work, but in new buildings are inadvisable. When ceilings are dropped, flexibility suffers.

LIGHTING is an indispensable tool of modern merchandising. Without up-to-date lighting and air conditioning, there could be no peripheral plan. Fluorescent lighting alone tends to flatten out merchandise and render it in monotonous sameness. Therefore use fluorescent to provide an overall light level, and then add the expensive, heat producing—but irreplacable—incandescent light for visual kicks. A grid pattern which can be varied endlessly characterized the store ceiling—which incorporates lighting, air conditioning outlets, and sprinklers. Sometimes the grid is a reflected pattern of the plan below; often it is merely a pleasing geometric pattern.

ELECTRIC STAIRWAYS handle vertical traffic best, and their treatment is an important design consideration. Since they cannot be construed as a merchandising device, they should be handled as a major decorative and dramatic feature. This can be accomplished by means of architectural excitement, color, expensive materials, lighting, etc. The result should have a "look" of permanence, not intransigence.

THE SMALL SHOP

Many principles of branch store design apply to small shop assignments. Since space is limited and so is merchandise, space allocation is enormously simplified. In small shop design it is important to follow the rule of using the exterior to make the impact of store character on the customer; and to make the interior give the best possible impression of the capacity of that shop to contain, display, and sell merchandise. This calls for a shift in approach from exterior to interior. In the branch store this is done *within the store* in handling individual departments where the impact is made at the entrance to a shop or department, not through a window.

Thus, in designing the small shop exterior, adapt the merchandise *display* to the outside; adapt the interior plan and design to *merchandising* needs.

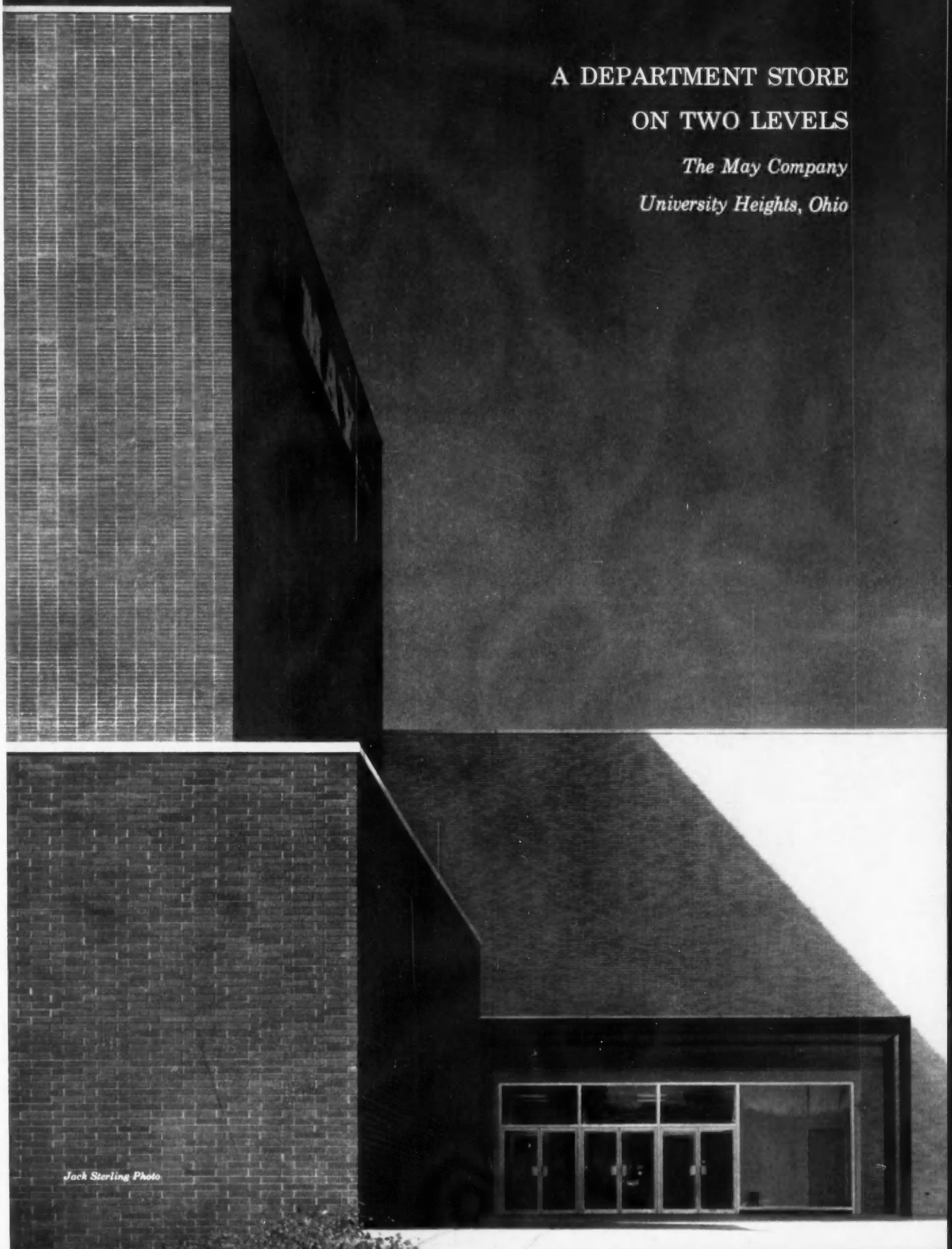
Julius Shulman

The total image of fashion store; J. W. Robinson, Beverly Hills, Cal.,

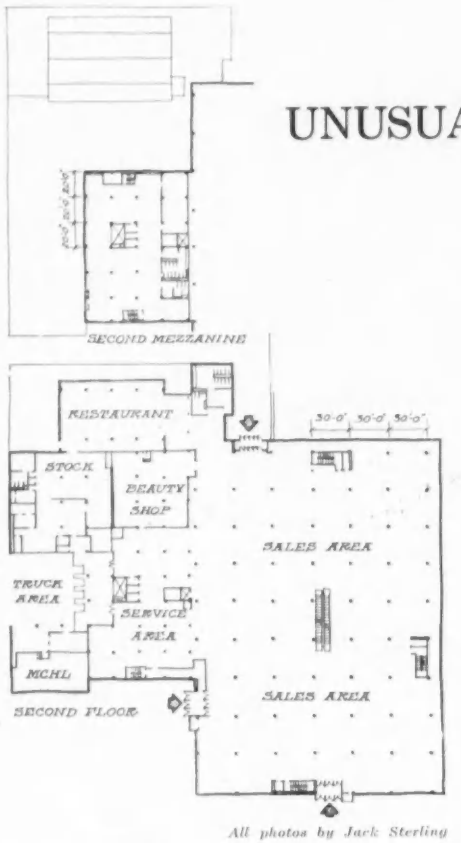
A DEPARTMENT STORE ON TWO LEVELS

The May Company

University Heights, Ohio



Jack Sterling Photo



All photos by Jack Sterling

UNUSUAL SERVICING ARRANGEMENT

The May Company, University Heights, Ohio. Victor Gruen Associates, Architects; Jack Alan Bialosky, Associate Architect; Sam W. Emerson Company, General Contractors; Swanson Associates, Sales Area Interiors.

A separated service tower, containing two floors to every one in the sales area, is the operational and architectural feature of this branch store. It is a modification of the central service core idea that was used in Northland. But here, in a store with a considerably smaller floor area, it was felt that the central core would create too much of a visual barrier in the retailing space; hence it was moved to one end of the rectangular sales block.

Within the tower itself, the floors aligning with the sales floors are used for direct servicing and goods handling, while intermediate floors are used for storage or non-selling activities such as alteration and busheling rooms, employes' restaurant, lounge, offices, etc. Air handling equipment is also located on the in-between levels, making possible a great deal of flexibility in the development of the air conditioning system. Boilers and compressors are in a penthouse, freeing additional tower space for essential store functions.

To reduce the floor-to-floor heights in the sales block, that unit was developed as a flat slab structure with columns at 30 ft on centers; while the service tower was developed in steel frame—with minimum column spacing—in order to cut the tower floor heights to an absolute minimum.

The site had a natural elevation differential of 25 ft from a V-shaped lower area near the highway intersection to the rear. The building is placed well back on the plot so the lower level is served by an extensive parking area, which in turn is surmounted on three sides by higher-level parking for the upper floor. The actual result is a store with two first floors, plus great flexibility in developing traffic flow.

MAY
ONE
WAY
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ENTER

MAY

MAY
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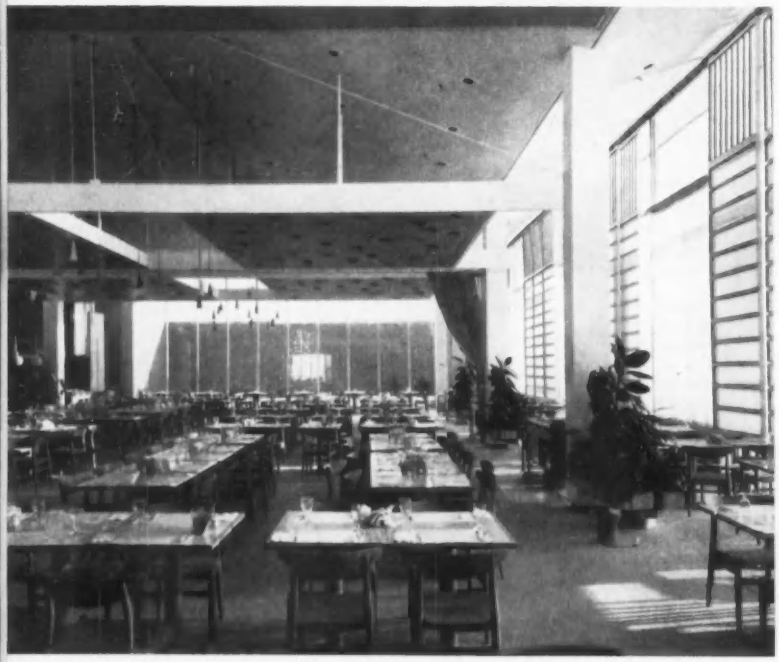
MAY



The May Company

Due to the scarcity of high class dining places in the area, the restaurant—designed by architect Gruen—was given special consideration. It was developed as a semi-independent structure adjacent to a garden within a high wall, which contains as its visual focus a year-around decorative fountain designed by Richard H. Jennings.

By separating the restaurant structure and giving it independent entrance, it became feasible to operate it on a schedule different from the normal store pattern. This means that the owners can—if they wish—develop a seven-days-a-week dinner business

TOWN HOUSE REMODELED INTO ATTRACTIVE GIFT SHOP

The 20th Century Shop, New Orleans, La. Burk, Le Breton and Lamantia, Architects; Barley, Inc., Civil Engineers and General Contractors.

This distinguished remodeling—winner of a first honor award at the Eighth Annual Conference of the Gulf States Region, A.I.A., succeeds in creating within the shell of an old town house a gift shop with an appealing character both contemporary and nostalgic.

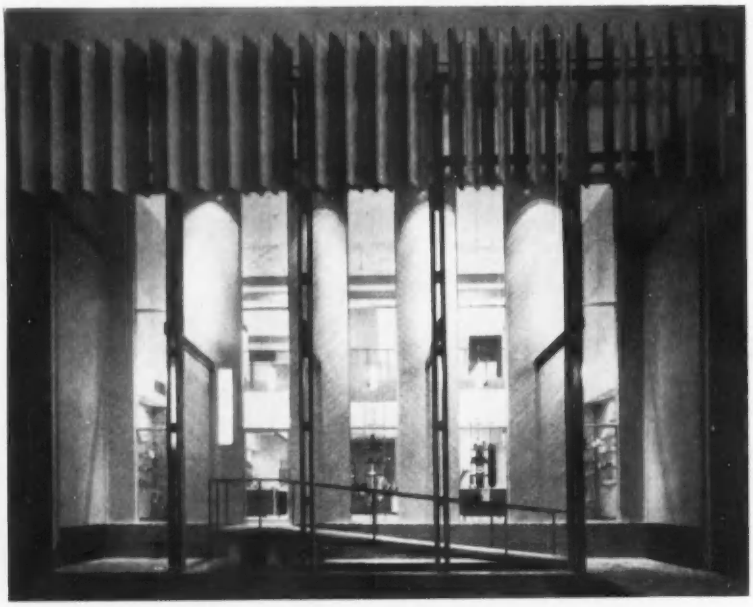
In describing the process and result, architect James Lamantia says, "The problem was the complete transformation of an 1885 double town house into a shop for small gifts of high quality. The proximity of this house to its neighbors dictated the conditions that a similar scale should be preserved and that materials should be harmonious.

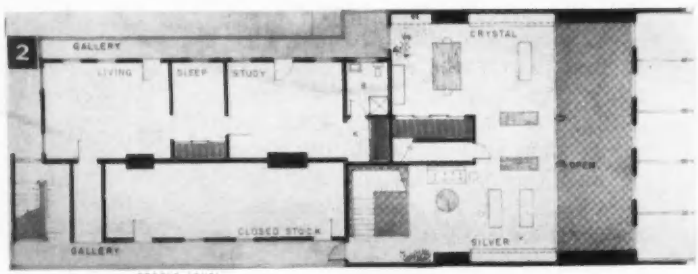
"The basic dimensions were therefore held intact—even to the alternate rhythm of vertical openings and blank wall area in the façade—although the building was virtually rebuilt, to the extent that even the outer skin was replaced.

"A second-level balcony was removed, along with most interior bearing walls, to be replaced by steel beams and split 'cradling' columns. A two-story well of space was created by cutting back the second floor to give the effect of a mezzanine as one enters.

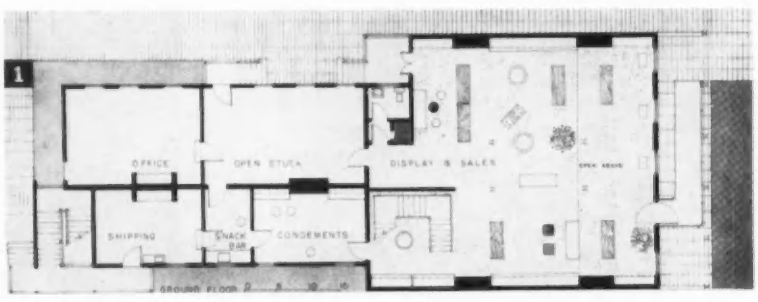
"The old masonry of the side chimneys was exposed to accent further the verticality of the space, and to serve also as a reminder of the original structure."

All photos by Frank Lotz Miller





SECOND LEVEL



The 20th Century Shop

The difference in level between floor and sidewalk was turned from a liability into a capital gain by the attractive open ramp, which makes a strong point of interest in the façade. The projecting louver is porcelain-enameled steel in alternate beige and bone-white colors; stucco side panels act as baffles at either side of the front; painted diagonal cypress boarding sheathes the wall areas between openings; the sash is of natural aluminum.

The floors are finished with rubber or asphalt tile; the walls are variously plaster, walnut panels, or the old brick; acoustic tile is used on the ceilings

JAPANESE RETAILERS INVADE FIFTH AVENUE

All photos: Louis Reens, courtesy Owens-Corning Fiberglas Corp.

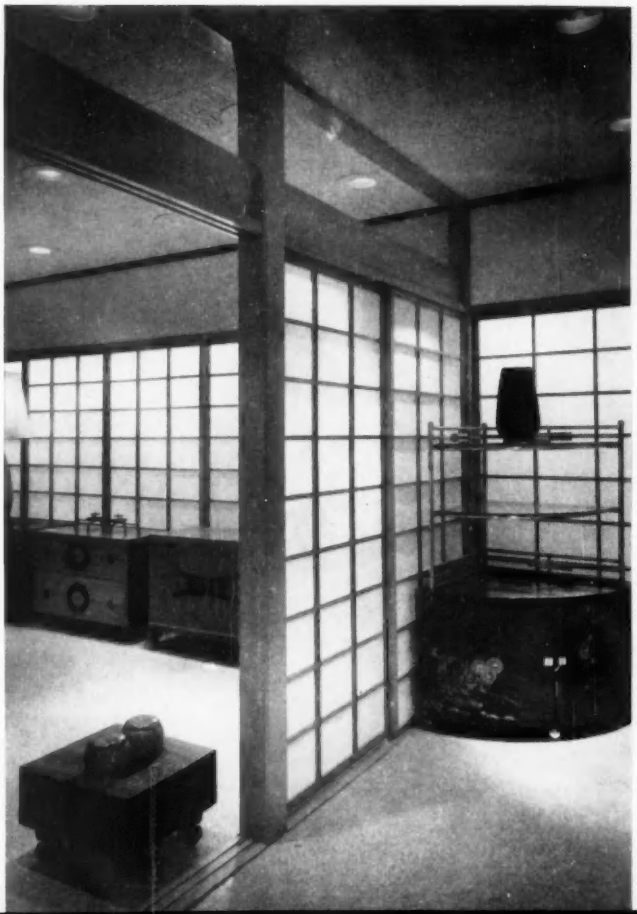
Takashimaya, Inc., New York. Steinhardt & Thompson, Architects; Junzo Yoshimura, Associated Architect; Robert P. Perillo, Mechanical Engineer; Lewin & Shapiro, Structural Engineers; Thomas Killian, Lighting Consultant; Charles Herman Co., General Contractors. Imported fixtures (1st and 2nd floors) by Shigeru Kawakami for Takashimaya Koshakusho, installed by Display Builders, Inc.

This effective remodeling—the first American branch of a Japanese department store chain—is notable for making its entire corner a two-story display; for successfully flouting a Fifth Avenue merchandising habit; but most importantly for creating in its three-story sales space an atmosphere peculiarly appropriate to store character and to the handsome, beautifully crafted (and expensive) Japanese merchandise. Inside, the total impression is of luxury and serenity—achieved physically by the quiet elegance of both goods and setting. The lighting is even; the walls are neutral or white; the carpeting is gray or tan; either light (hinoki) or dark (keyaki) natural wood makes a soft accent everywhere.

Placing the stair at the entrance—rather than further back in the store, only to be reached after passing tempting displays of impulse goods—is contrary to usual merchandising technique; but making a visual focus of the cherrywood and steel stair construction has created such an eye-catcher that visitors have far outnumbered expectations, and selling is brisk.

A garden under the stairway—arranged by David Engel—greets the visitor upon entering. The ground floor is then devoted to gifts, books, fabrics, etc.; the second floor to larger and more expensive items of metal, pottery, wood, and glass; the basement area features furniture, displayed under lighting of a domestic character.

The bottom right photo on the opposite page shows the garden under the stair; the other two picture the basement furniture sales area.



Cameron Liquor Store, Tarrytown, New York. Arthur Malsin and Don Reiman, Architects; Edward Schildback, Associate.

Joseph W. Molitor

ATMOSPHERE PLUS MAXIMUM DISPLAY OF GOODS

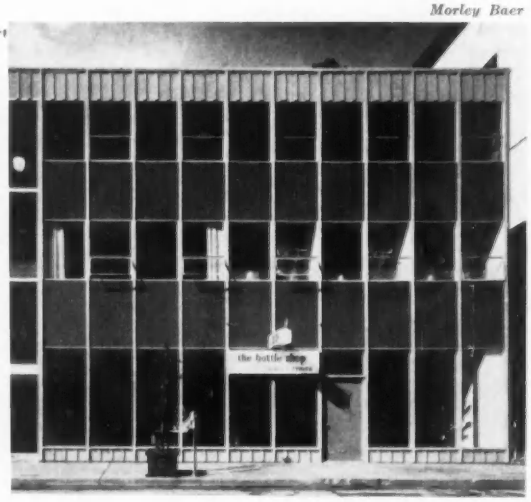
The image liquor stores try to present is of maximum stock, so the customer can purchase any familiar brand and also see others of which he has never heard. Prices are usually prominent in the display in order to make comparison shopping easy.

But a more subtle and important quality is atmosphere. Each of the shops shown here successfully creates its own air, yet one has a completely different feeling than the other. Both are attractive and successful.

The Cameron store (above) was an interior job within an existing shell and front. It has a closed-in, or inside, or wine-cellar look; furthered by the smart, curved ceiling of natural cypress. High-level lighting plus special shelving and cases with maple butcher-block tops and white uprights add to the general effect, which is inviting.

The Bottle Shop (right), on the other hand, opens up to the outside in California fashion to make the entire store a display. A gravel and planted strip next to the glass contributes to this effect. The lighting here is of a generally low level, with spots emphasizing the merchandise on display.

Morley Baer

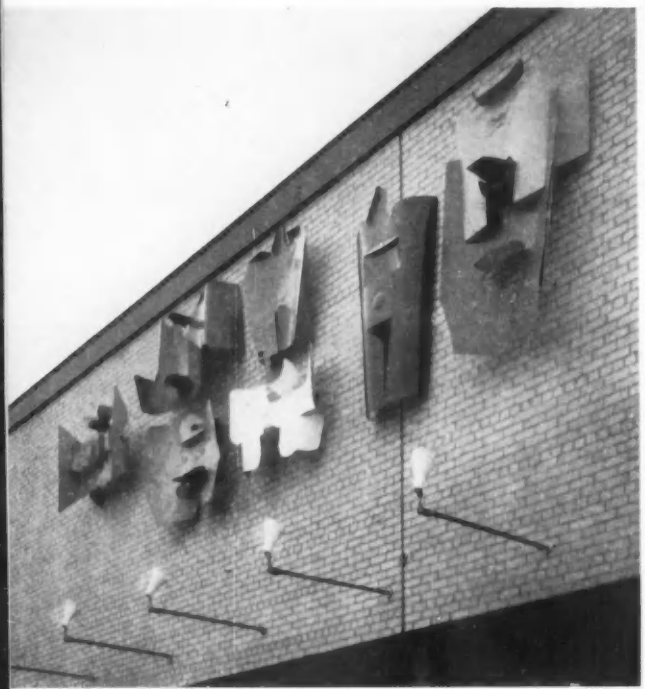


The Bottle Shop, Inc., Sausalito, Cal. John G. Kelley, Architect; Dorothy Alexander, Project Manager.

Joseph W. Molitor

Morley Baer

MERCHANDISING BY ARCHITECTURE AND GRAPHICS



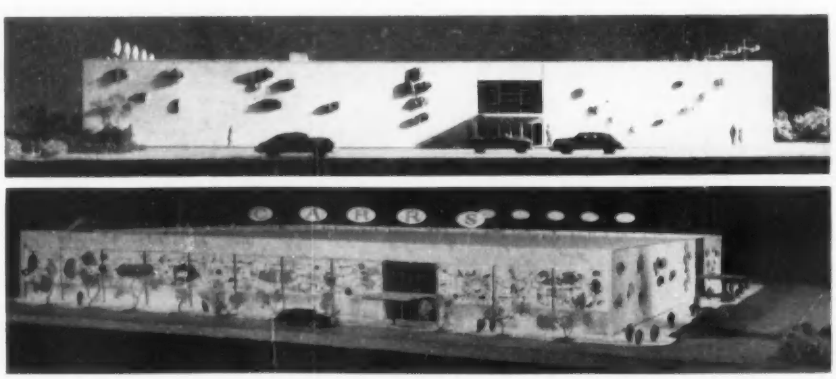
Photos by Joseph W. Molitor

Carr's Department Store, West Orange, N. J. Katz Waisman Blumenkranz Stein Weber, Architects Associated; Constantino Nivola, Sculpture; Ladislav Sutnar, Graphics; Alfred Engel, Lighting Consultant.

Architect Richard G. Stein says, "This Carr's represents the trial run of a concept. We originally prepared a merchandising study for a self-service department store, combining our efforts with those of sculptor Nivola and graphics designer Sutnar. (see model photos below—Ed.). When plans were complete, lease negotiations fell through. In order to set up a prototype without delay, space was rented in the Essex Green Center, under construction.

"The job then was to apply the principles of the previous study to an existing space. Nivola designed sculpture (left) which was executed in porcelain enamel; Sutnar developed a new system of graphics.

"Since space is intensively used for merchandising, and department sizes must shift with the seasons, the flexibility of the fixtures has worked out well."



carr's

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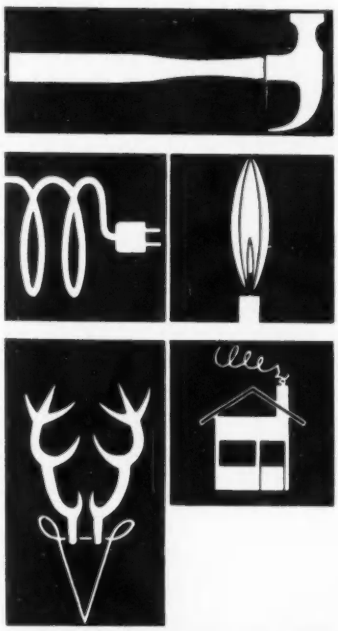
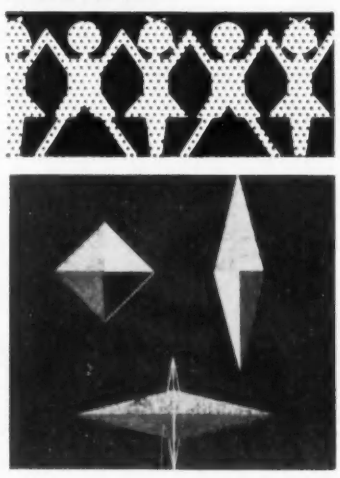
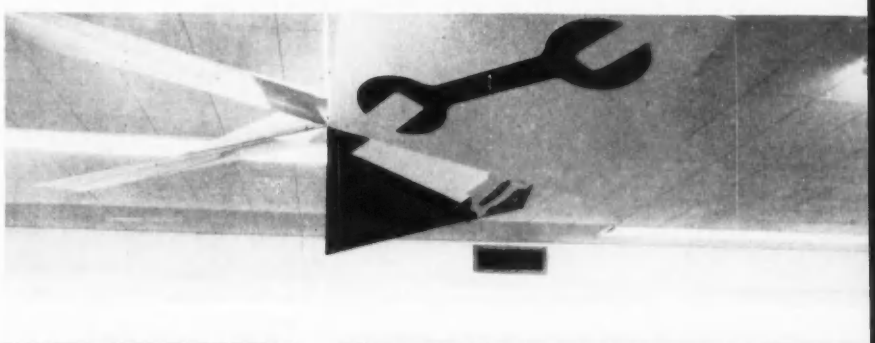
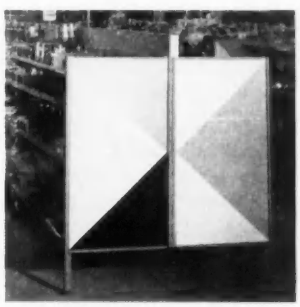
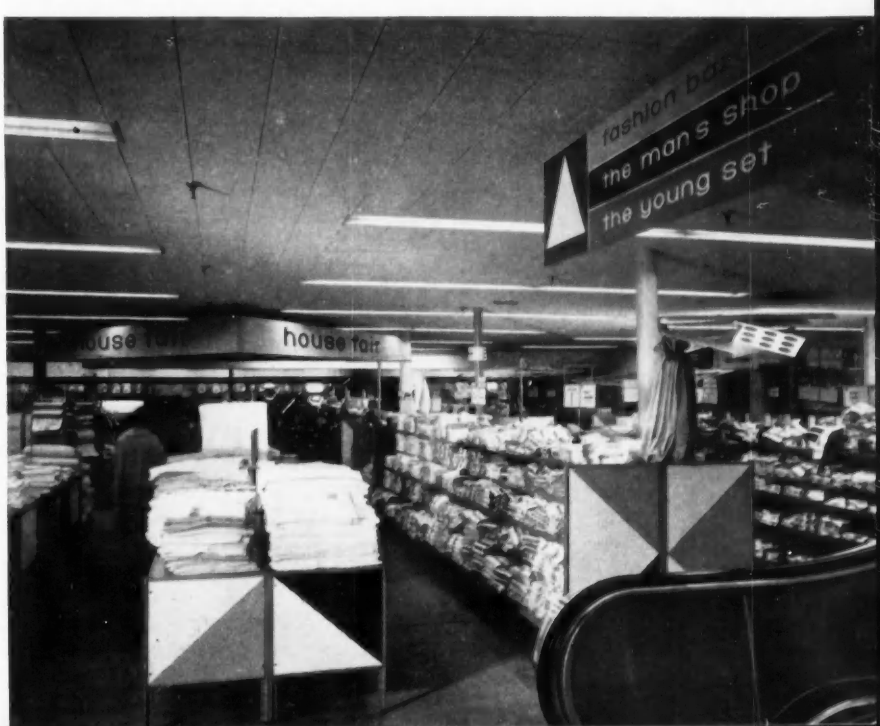


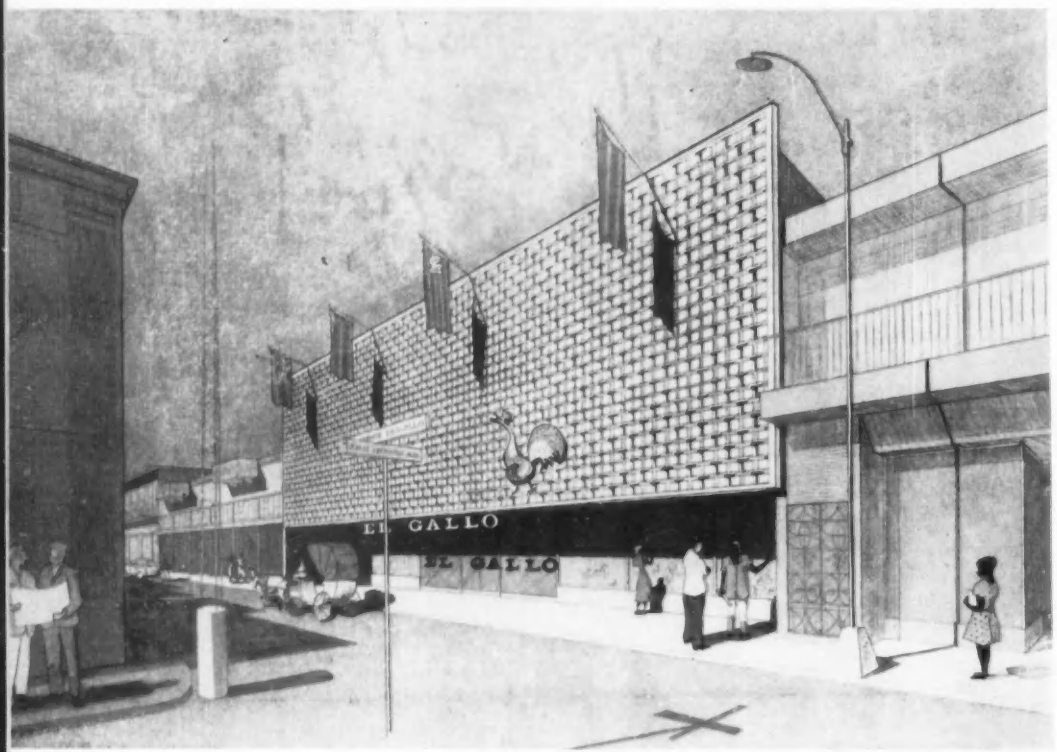


The logotype identifies the store from near and far; by day and by night. The symbols are used to identify merchandising departments, and combine with a color system (for counter ends and signs) to that end. Graphic design was carried through to include shopping bags, stationery, etc.









DECORATIVE FAÇADE OF PRECAST CONCRETE

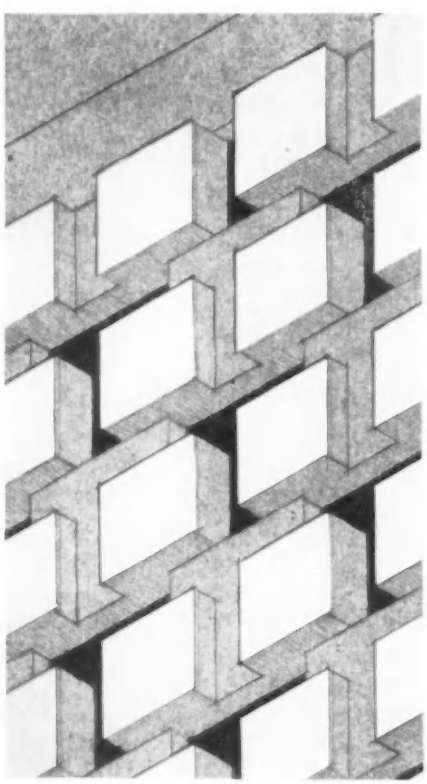
Tienda El Gallo Department Store, Santiago, Dominican Republic. Steinhardt & Thompson, Architects; Ml. de Js. Tavares Sucs., C. por A., Owners.

El Gallo, leading department store of the Dominican Republic, is celebrating its centennial by constructing a new store building, which will be appended to the half-dozen buildings it now occupies.

Appropriately enough in the sub-tropics, the new structure will be reinforced concrete. Its street façade will consist of perforated precast concrete screens composed of the letter "T," the owner's initial. The modular screen will fulfill both the local requirements for natural ventilation and the esthetic need for a decorative pattern.

American merchandising practices fall by the board in Santiago, where no ready-made dresses are sold, since the Dominican ladies do it themselves. Thus, the huge yard-goods department offers a selection from thousands of fabrics from around the world. Here also, North American impulse items such as giftware and accessories become demand goods.

Both glass and aluminum jalousies—demanded by the climate—will be extensively used; merchandise will be displayed in fixtures built of local hardwoods; floors will be surfaced by especially designed cement tiles—a traditional local material.



Architectural Engineering

Never Underestimate the Power . . . !

Underestimating future electrical loads (even in the short term) is one of the easiest ways today to make a building obsolete before it gets off the boards. Electrical systems, even in quality buildings less than 10 years old, have over-reached their capacity. In some cases engineers have come to the rescue by converting a system to high voltage, doubling its capacity. (Such measures may not always work, since high voltage systems now are often put in at the beginning.) Contributing factors are air conditioning, higher lighting levels (100 foot-candles in an office is common), electronic computers and business machines. Signs are, too, that electrical energy as the basic source for both comfort heating and cooling is coming faster than many realize. Specifically this means the heat pump, electric resistance heating (there are about 200 electrically heated schools), and, perhaps not too far away, direct conversion of electricity into cooling effect. The heat pump, after not living up to its early publicity, is now finding great favor in buildings such as stores, factories (see pp. 220-221) and office buildings.

Decibel Trouble

Want to know how many people you can have for cocktails in a certain-sized room, and still keep the decibels under control? Then you should use a formula (*The Journal of the Acoustical Society of America*, Jan. 1959) concocted by Dr. William R. MacLean, an engineering professor at Brooklyn Polytech. Invite one more guest than a certain critical number (he starts everybody talking louder) and you will have a noisy party. For example a room with 2500 cu ft could contain 16 people; ask a 17th and you've got a dt situation (decibel trouble).

Water, Water Everywhere?

Fresh water, the sine qua non of human and industrial life, is getting harder to find in many areas of the world, including some part of the U.S. Re: the water situation, the Interior Department's Office of Saline Water will build a million gallon per day pilot plant at Harbor Island, N. C. to convert brackish or sea water to potable water. It is the first of five plants contemplated under a 10 million dollar appropriation from Congress. Southern California Edison Co. of Los Angeles will begin to build in June a pilot plant to distill 100,000 gallons a day from sea water.

Two Noted Engineers Are Dead

Hardy Cross, 74, legendary in the annals of engineering and in the "halls of ivy," died in February. He was best known for his moment distribution method for rigid frames. This method epitomized his pragmatic approach to engineering. Why complicate a design method with mathematical mumbo jumbo when it can be simple and easy? It has been said that the Hardy Cross Method enables a designer to "see" what is happening to the stresses in the frame as he approximates the solution.

Felix Samuely, 56, English consulting engineer, perhaps best known in the U.S. for his lectures and articles on "skin structures" (folded plates, latticed frames and shells), died in London last January. Recently he had consulted with Wallace Harrison on the whale-like church built in Stamford, Conn. Said the *Architects Journal* (London), "He did not see the engineer's role as one of fettering the architect and bringing him down to earth; he joined . . . in an endeavour to find yet more efficient and more exciting solutions to structural problems."

This Month's AE Section

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HEAT PUMP FOR A MIDWEST FACTORY. pp. 220-221.

FORGOTTEN ENGINEERING. The Phoenix Column. pp. 222-225.

HIGH VELOCITY CUTS BUILDING COSTS. p. 226.

PRODUCT REPORTS starting on page 227. *OFFICE LITERATURE* starting on page 228.

TIME-SAVER STANDARDS. Plastics as Related To Fire Resistance Requirements, pp. 231, 233; Chimneys for Medium Sized Boiler Plants, 235.

Architectural Engineering

A GUIDE TO EMERGENCY POWER SUPPLIES

Types of loads, types of systems available, unit capacities for building types

Codes, safety and economics

Types of buildings, locations in buildings, space requirements

By LOUIS A. BELLO, P. E., Syska & Hennessy, Inc., Consulting Engineers

Emergency or standby power supplies are provided for any one or combination of the following reasons:

1. Human safety
2. Economical considerations
3. Convenience

Minimum requirements for human safety are set forth in local and federal codes and are required by local fire and inspecting authorities. It should be clear, however, that their requirements are only minimum and that many times provisions above the minimum should be provided. For instance, hospitals should have emergency supply at least for one elevator, iron lungs, incubators, heating and refrigeration equipment, communication systems, etc., in addition to minimum required lighting for operating rooms, stairs, and corridors. Office buildings might have one elevator, heating and telephone equipment, certain minimum lighting, etc. A close study of the varied electrical equipment and systems of any building would undoubtedly reveal other loads worthy of emergency consideration.

Protection of valuable equipment, safeguard against pilferage and the high cost of lost production time are the common economical considerations that dictate the need for, and many times the capacity of, an emergency standby power source. Typical examples would be:

1. Heating and pumping equipment—to prevent pipes from freezing and basements from flooding.
2. Department store lighting—to prevent or minimize shoplifting.
3. Electronic computer equipment—to prevent costly shutdown.

The common available sources of power for supplying emergency loads are:

1. Storage batteries
2. Generating systems
3. Utility electric services

The selection of the best source for a particular installation will be governed by the capacity of the source, availability of fuels, utility company rules, building codes and local authorities, floor space allocation and last, but not least, economical considerations.

For full understanding of the sources and more intelligent selection of the best emergency source for a particular installation, a brief description with pertinent data, of each type of source is included.

STORAGE BATTERIES

A storage battery can be restored to its initial condition, after use. A common example would be the automobile battery. Other batteries, known as primary batteries, must be replaced when fully used.

There are two basic types of storage batteries in commercial use today, the lead-acid and the alkaline.

The lead-acid battery derives its name from the basic composition of its electrode plates and solution. It is the most common type used in this country and is available in various quality grades, as determined by the contents and construction of its electrode plates, their supports and their separators.

The alkaline battery derives its name from the chemical composition of its solution. The electrode plates of this battery differ from those of the lead-acid type; they are made of nickel-iron (Edison cell), or nickel-cadmium. This battery is more common in Europe and is claimed to have longer life with less maintenance. Its cost, weight and volume, however, are greater than for the lead-acid type.

To understand the application of batteries better it is necessary to define some basic battery terminology. The following includes some common terms and their practical definition:

Cell: A self-contained unit of plates, solution and two binding posts to which the positive and negative plates are connected.

The chemical composition of the cell plates and solution alone determine the voltage of the cell. In lead storage batteries a single cell is approximately 2 volts when fully charged. To attain higher voltages, cells must be connected in series, thus three cells connected in series will provide 6 volts, and 60 cells, 120 volts. Actually, however, a 60 cell system will be conservatively rated at 115 volts.

Battery: One or more cells in a connected group.

Ampere-Hour: The capacity of a battery is indicated by the quantity of current in amperes that can be delivered for a certain number of hours before its voltage falls below a useful value (approximately 1.75 volts).

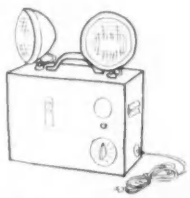
Since a given ampere-hour capacity could be made up of any quantity of amperes or hours, which when multiplied together would give a single ampere-hour capacity, it is necessary to specify a time rate.

Thus a battery rated at 160 ampere-hours at the 8 hour rate would deliver: $\frac{160}{8} = 20$ amperes of current for 8 continuous hours before its voltage would drop below the useful value of 1.75 volts per cell.

The slower the rate (more hours) of discharge, the more efficient the battery.

Maximum ampere-hour capacity is determined by the quantity, size and construction of plates in each cell.

Modern buildings utilize storage battery emergency power sources for



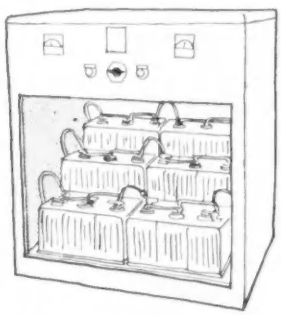
6-volt packaged battery unit. Can be furnished with lamps for remote mounting

Government May Pay Part of Equipment Cost for Portable Diesel Generators

Criteria for approval under the Federal Office of Civil Defense Mobilization Financial Contribution Program

Meet the requirements set forth in the "Federal Contributions" Volume of the *Administrative Manual of the Federal Civil Defense Administration*. Some of its basic requirements are:

1. Generally the equipment must be located at least five miles beyond a target area. In the case of non-profit hospitals, the equipment may be located anywhere.
2. The equipment must be removable as a unit. Thus an engine-generator should be mounted on a common frame with controls.
3. Federal contribution will be based on capacities as determined by calculating methods in the manual. For larger capacities the total cost of excess capacity must be borne by the owner.
4. Equipment must be kept operational and available for possible training purposes.
5. Application forms must be filled out with the local civil defense director and submitted for approval.



32-volt packaged battery system

emergency lighting, switchgear operation, alarm systems of various types, telephone equipment, engine generator starting, and many other types of direct current equipment that do not require large blocks of power. Another condition of use is that normal service failures should be of relatively short duration. Batteries have two outstanding features that will often cause them to be included in installations with other sources of emergency power: Reliability and instantaneous response. The only special provisions normally required for rooms containing storage batteries are good ventilation and some signalling equipment to indicate battery condition.

Some typical battery equipment and systems are:

1. *6 Volt Equipment:*

An interesting application for emergency lighting is a self-contained packaged unit consisting of standby sealed beam lamps, a three-cell (6 volt) battery, charging equipment, automatic switching and indicating devices. The units are commercially available with up to four sealed beam lamps either locally or remotely mounted. Other incandescent lamps such as those in exit signs, ocrridor lights, etc. can replace the sealed beams within the limits of the battery's capacity (approximately 100 watts) and voltage.

The unit is normally plugged into an a.c. receptacle, which serves to keep the battery charged, and a contact open in the circuit between battery and the sealed beams. When the normal supply to the receptacle fails, indicating power failure, the open contact closes and the battery supplied the connected emergency lighting.

Cost of a complete unit with sealed beam lamps will vary between $100 and $200 depending on the accessories and type of batteries (lead-acid or alkaline).

Typical dimensions of a unit might be 12 in. high by 18 in. wide by 8 in. deep (without lamps).

2. *24, 32 and 48 Volt Equipment:*

This equipment can be used for telephone systems, alarms, and emergency lighting. The batteries are usually mounted on a floor rack with the charger and transfer switch wall mounted. For emergency lighting, standard capacities up to 600 ampere-hours (at the one hour rate) are available, capable of handling up to 20 kilowatts of power, at 32 volts for one hour. Such high capacities at 32 volts are not common; however, a more common installation might be a 60 ampere-hour battery (at the one hour rate) capable of handling 1.9 kilowatts of power, at 32 volts, for one hour. Some manufacturers will furnish neat and economical packaged units in this capacity range for as little as $800.

Space requirements for 32 volt equipment in the 2 kilowatt capacity range will be approximately:

72 by 12 by 12 in. for batteries on one tier standard rack,

15 by 24 by 15 in. for wall mounted charger,

42 by 36 by 30 in. for package unit.

3. *115 Volt Equipment:*

This is the most common central distribution type of equipment used. It has the advantage of being interchangeable with 115 volt alternating current to supply incandescent lighting, and of being more economical for higher capacities (above 2 kw). The equipment consists of the same type of components mentioned previously, and it can supply emergency lighting, switch-gear controls, electric heaters, and numerous other equipment. Capacities up to 600 ampere-hours (at the one hour rate) are capable of handling 70 kw for one hour.

The installed cost of a system of this capacity would be approximately $20,000.

Space required for an installation of this type might be:

20 by 3 by 4 ft for batteries and rack,

15 sq ft of wall space for charger and transfer switch.

4. *230 Volt Equipment:*

Similar to 115 volt equipment except that it has higher voltage and twice as many cells. The equipment can be connected to a three wire 115/230 volt, direct current distribution system for more economical power delivery to large loads at greater distances from the power source.

ENGINE—GENERATOR SYSTEM

Engine driven generator systems can supply alternating current loads, are more economical for larger capacities and can be operated for as long as fuel supply will permit.

There are four major engine driving units that can be employed to drive an electric generator:

1. Diesel engine,
2. Gasoline engine,
3. Gas engine,
4. Steam engine.

A brief description including pertinent data regarding the various engine-generator systems follows:

DIESEL ENGINE-GENERATOR SYSTEM

The unique features that make the diesel engine desirable for emergency standby use are its ability to operate on common fuel oil, diesel oil, or kerosene, and the fact that a spark or auxiliary ignition system is not necessary.

Fuel oil operation is less hazardous than gasoline and the fuel can usually be stored, up to 550 gallons, in the same room with the engine-generator. It is also possible to use a tank in common with the building heating fuel oil system.

The diesel engine differs, basically, from the spark ignition type engines in that the fuel need not be vaporized in a carburetor prior to being injected into the engine cylinders, and there is no need for spark plug ignition. Spontaneous ignition is accomplished by the high temperature compressed air present in the engine cylinders at the time fuel is injected.

Diesels are popular because of their reliability, ruggedness, low maintenance, economical operation and low initial cost for capacities above 60 kilowatts. However, special considerations are required for room temperatures below 40 F.

The basic components of a typical standby diesel-generator system are as follows:

1. *Diesel Engine and Electric generator:* On a single shaft with engine starting and control equipment all mounted on a common base.

2. *Fresh Air Supply:* Through a screened louver in an exterior wall of the engine room or a fan supply system suitable for delivery and exhausting the required quantity of air to and from the diesel engine.

3. *Fuel Supply:* From a storage tank to a local day tank to insure a ready fuel supply.

4. *Cooling:* By either a fan and radiator or a heat exchanger. The fan and radiator is the most economical cooling means where air temperatures are low enough and sufficient volume of outside air is available.

5. *Engine Exhaust:* through a muffler and adequate piping directly to the outside or through a chimney flue. Mufflers for exhaust silencing are available in various degrees of silencing, and where noise for emergency or testing periods cannot be tolerated the additional expense involved in a quieter muffler may be justified.

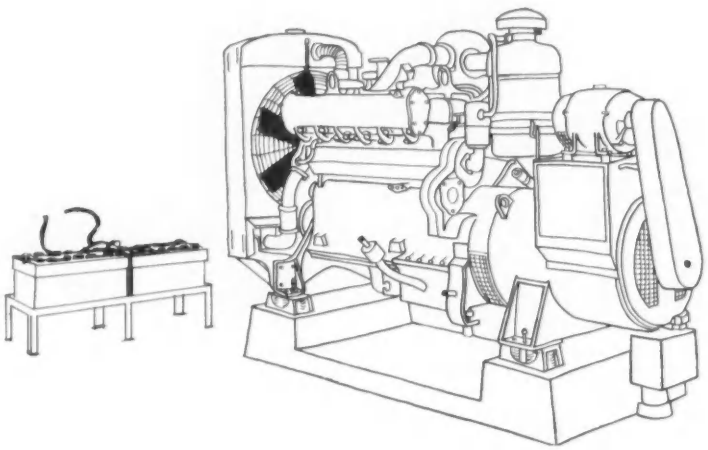
6. *Starting:* By engine mounted electric starting motor and battery. Where the engine can not be started electrically, compressed air, hydraulic or gasoline starting may be furnished.

7. *Electrical Control and Transfer Equipment:* Consisting of a circuit breaker, relays and an automatic transfer switch. The transfer switch connects the emergency building load either to the building's normal electric service or to the diesel-generator emergency service automatically as follows:

a. An auxiliary relay supervises the normal power supply so that when the voltage on any line drops to 70 per cent or less of rated voltage, a contact closes to start the diesel-generator and set up the transfer switch for transferring to the emergency load. When the generator is up to speed and delivery at full voltage, a relay is energized and the switch transfers to the emergency service.

b. The reverse transfer occurs in like manner except that the voltage value for retransfer is usually 90 per cent of rated voltage.

8. *Foundation:* Of either floating concrete pad, poured concrete base, structural steel frame, or wood beam construction should be furnished.



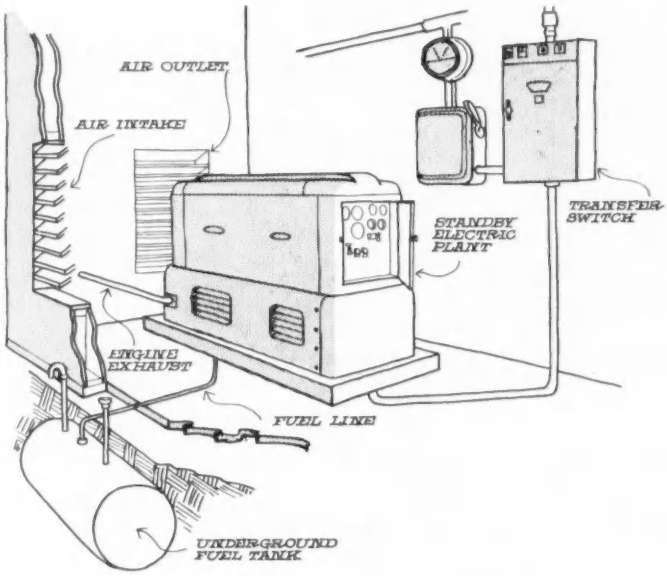
Diesel generator

The installed cost of a typical 200 kilowatt diesel-generator system exclusive of electric wiring might be about $35,000. The Civil Defense Authorities have recently initiated a program for subsidizing up to 50 per cent of the cost of a diesel-generator plant if it meets certain minimum requirements.

Space requirements for a plant of approximately 200 kw might consist of a room 20 by 12 ft containing the engine-generator set, electric control panel and a 275 gallon day tank for fuel.

GASOLINE ENGINE-GENERATOR SYSTEM

A gasoline engine is considered a spark ignition engine. It requires spark plugs and carburetor and can be connected to drive a generator in a similar manner to the diesel engine previously mentioned. Its major advantages lie in lower initial cost for



120/208-volt gasoline engine-generator

capacities below 75 kilowatts, and because the required engine maintenance can be handled by an automobile mechanic instead of by specially trained mechanics, as is the case for the diesel and steam engines type of drive.

The basic components are similar to the diesel engine-generator system except fuel storage tanks must usually be located outdoors underground to meet code requirements (gasoline being more hazardous than diesel fuel). Exhaust piping methods also are more restricted for gasoline engines. National Board of Fire Underwriters, building codes, insurance cost and local fire authorities should be consulted for gasoline engine installations.

A typical 20 kilowatt gasoline engine-generator plant might cost about $3500; an equivalent diesel setup, on the other hand, might cost $4500. As larger capacity units are considered, the initial costs between the two begins to even out and at about 75 kw the gasoline plant becomes more expensive.

Space required for a 20 kilowatt gasoline engine-generator plant would require a room about 16 by 9 ft containing engine-generator set, engine mounted electric controls and a wall mounted transfer switch. Additional consideration would have to be given to a buried fuel storage tank.

GAS-ENGINE-GENERATOR SET

The gas engine is a spark ignition type of engine and it is interchangeable with the gasoline engine, since it can easily be adapted to operate with either fuel.

Gas operated engines require less maintenance and in most areas are more economical than gasoline operated engines.

The fact that the engine can operate either on gas or gasoline means it has the added advantage of a standby fuel. Fuel storage tanks, for purely gas engines, can also be omitted where utility company gas service is available. The quality of gas will effect the engine efficiency (i.e. propane and butane gas are relatively efficient for gases below 1100 Btu heat content, the efficiency drops anywhere from 95 to about 50 per cent). Therefore the gas available for fueling should be carefully checked prior to engine sizing.

STEAM ENGINE-GENERATOR SYSTEM

Where there is sufficient steam and the physical plant is suitable, consideration may be given to the use of a steam engine or turbine for driving an emergency generator; however, the installed costs of this engine or turbine are considerably higher than those for the other engines mentioned. Steam engine-generator systems are quite common in a boiler plant, where steam capacity is readily available.

UTILITY COMPANY SERVICES

There are two basic ways of acquiring emergency supplies from ordinary utility company service:

1. Two service entrances consisting of a normal and emergency supply, each connected to separate points on the utility company outside distribution system.

2. A single service entrance with a normal and emergency distribution system within the building.

In New York City, for example, where Consolidated Edison has a network system, there would be very little advantage in two services since the system to which the services are connected is energized from many points and is quite reliable. The only additional protection afforded by two services in place of one would be in the cable between the connection to the street network system and the building distribution system. On the other hand, in some outlying areas of the city where a network system may not exist, two services are sometime furnished and are connected to separate utility company outside distribution systems.

In network areas a common means of furnishing an emergency system within a building is by a single service entrance with a feeder tap after the meter and ahead of the main disconnect switch.

Of all the emergency distribution systems available, the last mentioned single service entrance, is the most economical with relative reliability. Of course, such a system can be made more reliable by the addition of one or more of the other emergency systems mentioned. This is very often done for hospitals where continuity of power is of the essence.

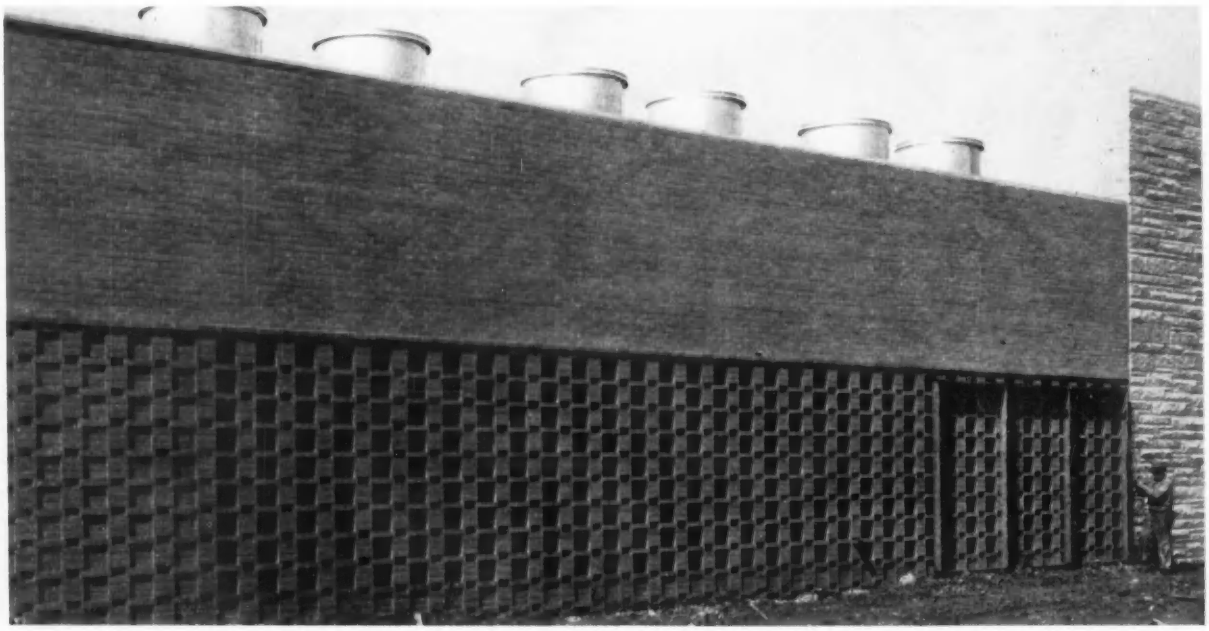
CONCLUSION

The availability of the various mentioned emergency power supplies may at first tend to confuse the selection of the one most suitable to a given project. However, a proper consideration of the *character, quantity* and *distribution* of the emergency loads will enable an experienced engineer to analyze the available power supplies and by a process of elimination arrive at the best suited one for the given building project.

Architectural Engineering

Big enough to heat 300 houses

HEAT PUMP FOR A MIDWEST FACTORY



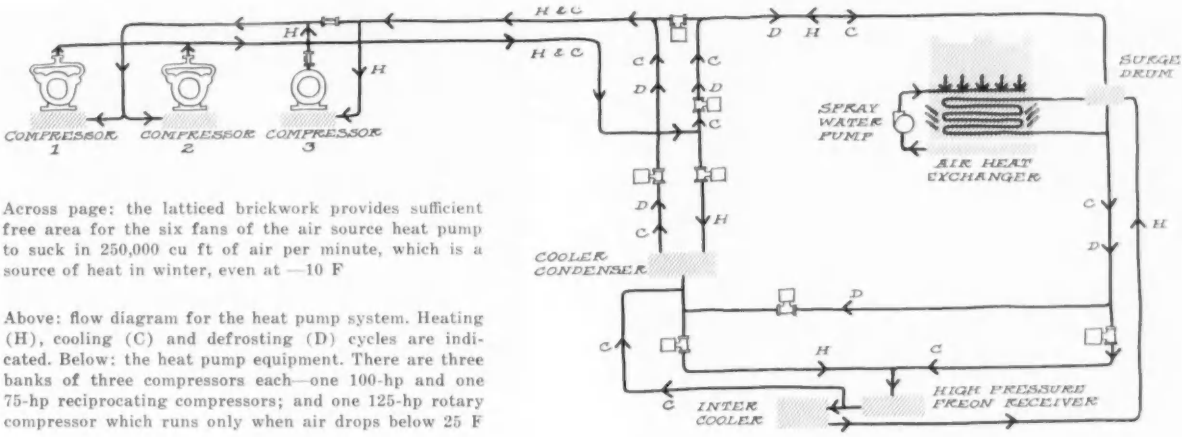
When it's ten below zero in Chicago, the heat pump system in a new 220,000 sq ft suburban factory will produce a total of 5½ million Btu per hr—enough to heat 300 average-sized houses. According to industry sources, this is the largest air source heat pump ever installed. Six big fans pull in a total of 250,000 cu ft per minute of outside air across refrigerant coils, extracting heat and in the process cooling the outside air down from —10 F to —20 F.

The heat pump will provide year-round air conditioning for factory employes and office personnel of a Flick-Reedy Corp. plant at Bensenville, Ill. The architects were Zay Smith & Associates of Chicago.

The heat pump saves $4800 per year on the heating bill—$7200 for the heat pump vs an estimated $12,000 for heat by oil. And less space was taken by the heat pump—2500 sq ft as compared with 3500 sq ft for boiler and absorption units.

The initial cost of the heat pump system was eight per cent higher, however—$540,000 for the heat pump vs $500,000 for oil heat in winter and mechanical cooling in summer. The $4800 savings in operating cost is virtually cancelled by interest charges on investment, by depreciation and by added service costs, according to Frank Flick, president of Flick-Reedy. He points out, however, that chances are good for the cost of electricity to become more favorable in relation to gas and fuel oil. Present rate for the Bensenville plant is ¾ cents per kilowatt-hour.

How can an air source heat pump operate economically at a temperature as low as —10 F? It generally has been considered that the lowest temperature at which a conventional air source heat pump could operate without having to be excessively large is +15 F, unless supplemental heat were provided, usually in the form of electric strip heaters. Straight resistance heating is ⅓ to ½ as efficient as the heat pump.



Across page: the latticed brickwork provides sufficient free area for the six fans of the air source heat pump to suck in 250,000 cu ft of air per minute, which is a source of heat in winter, even at —10 F

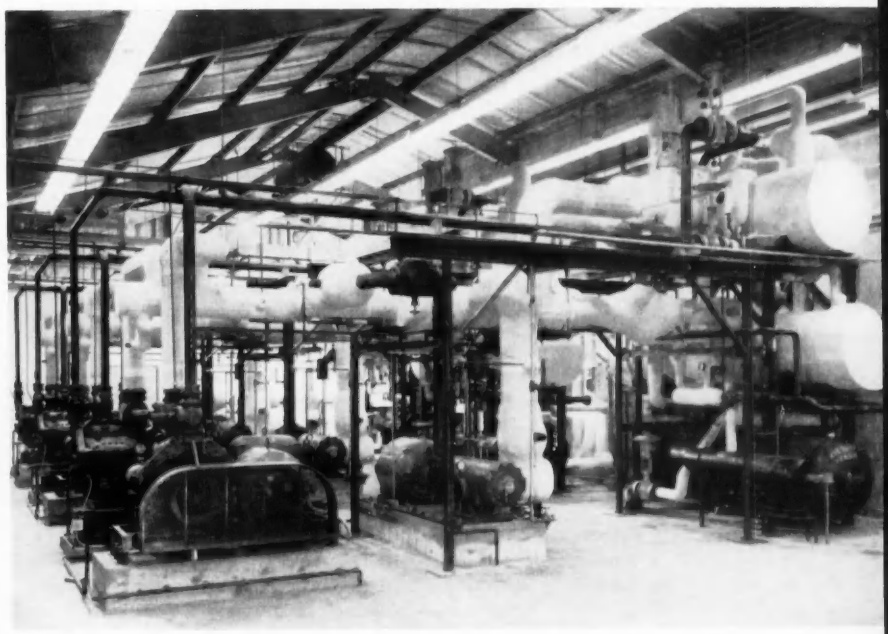
Above: flow diagram for the heat pump system. Heating (H), cooling (C) and defrosting (D) cycles are indicated. Below: the heat pump equipment. There are three banks of three compressors each—one 100-hp and one 75-hp reciprocating compressors; and one 125-hp rotary compressor which runs only when air drops below 25 F

A different approach, which makes for more efficient operation at low air temperatures is being advocated by the York Division of Borg-Warner Corporation. This consists of teaming up two stages of refrigeration compression—actually, the compressors are hooked up in series. Result is that the heat pump doesn't have to elevate the refrigerant from —35 F to a utilization temperature of, say, 110 F all in one jump, but rather in two jumps. With this so-called compound compression, each compressor can work within a moderate, economical range in contrast to single stage compression in which one compressor must work within too large a pressure range to be efficient.

This method is used at Flick-Reedy, and the output from the heat pump itself will range from 2.2 to 5.0 times the electrical energy input. Lessening the load of the heat pump is a one million Btu per hour credit from the lights. The heat pump consists of three banks of three compressors, each, in the following capacities: two reciprocating compressors, 75 hp and 100 hp; one 125 hp rotary compressor which operates only when the double-stage compression is required in winter. This one is switched on when the temperature goes below approximately 25 F. Any two sets of compressors will maintain proper temperatures while the third unit goes through the sort of defrosting cycle necessary with an air source heat pump. (Ice accumulates on coils in contact with outside air.)

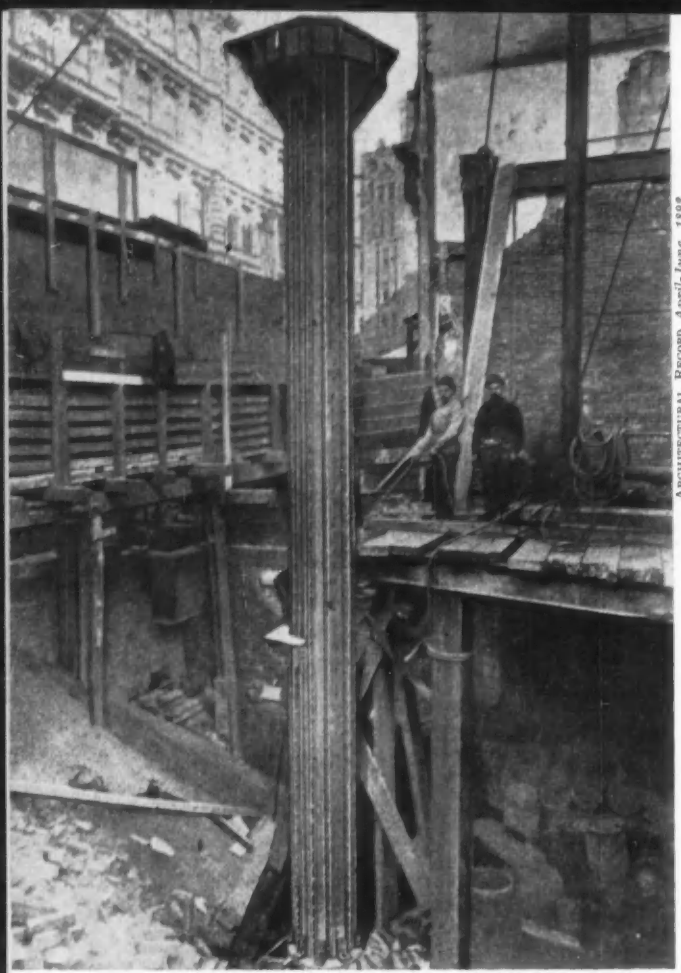
At around 45 F to 50 F it is conceivable that only one 100 hp compressor will be required to carry the heating load.

This is the way the winter cycle works for the Flick-Reedy installation assuming —10 F outside air:

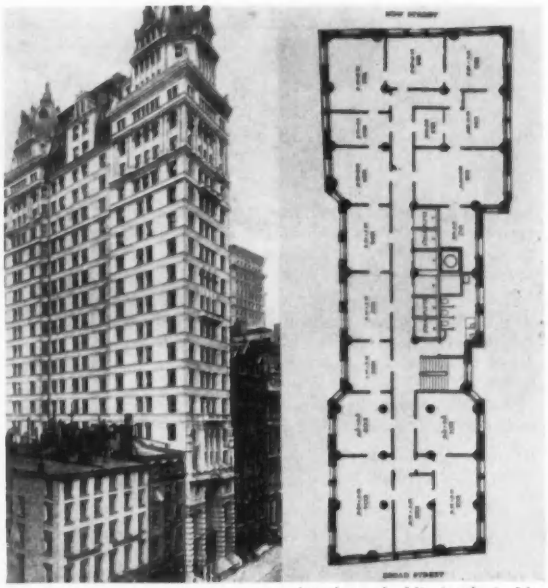


First, fans draw the —10 F air across coils containing Freon gas at —35 F; heat is extracted from this air lowering its temperature to —20 F and adding heat to the Freon. The "heated" Freon gas is then compressed in two stages to 110 F, first by the 125 hp unit and second by the 100 and 75 hp units in parallel. This hot Freon gas is piped through a heat exchanger condenser, warming water in the condenser and liquefying the refrigerant. The heated water is pumped through air handling units which supply heated air to factory and office areas. The liquid refrigerant is then fed through a heat exchanger inter-cooler to reduce its temperature to +30 F before it is allowed to expand again to a —35 F gas in the outside coils, repeating the cycle.

The three 125 hp rotary compressors do not work in the summertime, because the refrigerant gas need only be lowered to 40 F to get 47 F water in air handling units which keeps inside at 75 F when outside temperature is at 95 F. The maximum range of refrigerant temperature is from 40 to 110 F. In winter, the difference is much larger, from —35 F to 110 F —thus the reason for double compression made possible by combining compressors in series.



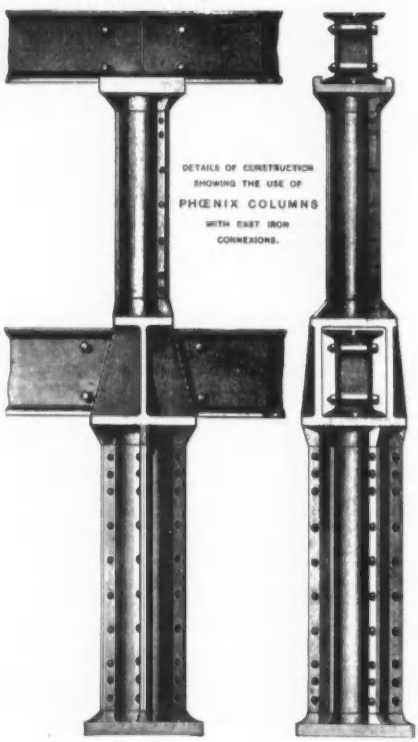
ARCHITECTURAL RECORD *April-June, 1898*

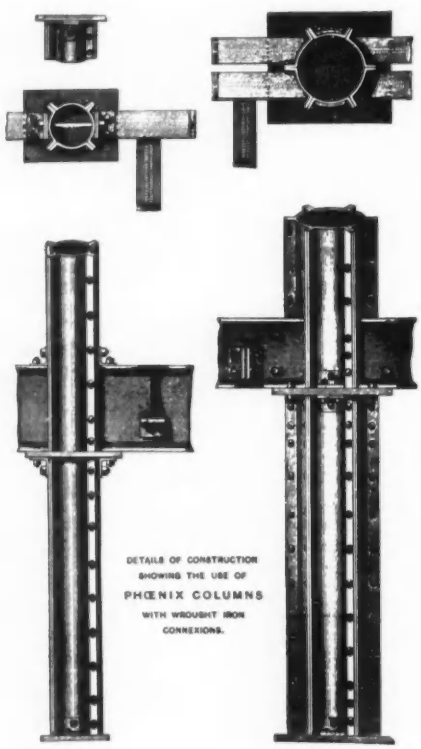


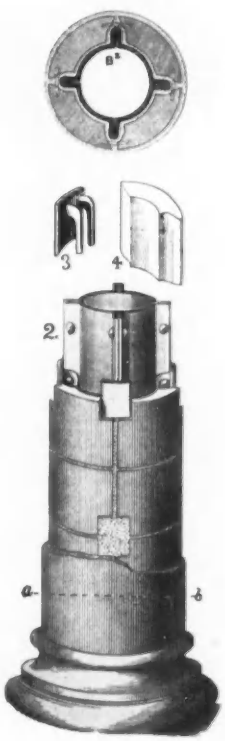
American Architectural Archive

Left: A Phoenix Column goes into place in the McIntyre Building in New York City. Above: In the Commercial Cable Building, New York City, Phoenix Columns were used for interior columns and to lighten exterior masonry walls. Below left: Details from an old handbook show wrought iron and cast iron connections developed for use with Phoenix Columns. Below right: Cutaway shows "Wight's Patent Process" for fireproofing

New York Public Library







Forgotten Engineering:

THE RISE AND FALL OF THE PHOENIX COLUMN

By ALAN BURNHAM, A.I.A.

Today, if one were to ask what a Phoenix Column was, most engineers would reply with a quizzical stare. Yet the Phoenix Column was well-known in their field for several decades before the turn of the century. A built-up circular column of wrought iron, it was, in its own era, a marked advance over the cast iron sections then so widely used. But like many engineering advances, it gained acceptance slowly: by the time its unique advantages were generally recognized, it was already being challenged by a newer development—rolled steel sections.

It was not until the 1860's that the elevator freed buildings from the six-story height limit set up by their tenants' refusal to climb any higher, and made it acceptable to stack masonry so high that the valuable ground floor space in tall buildings began to be wholly devoured by the thickness of the fortress-like walls required to support them. But a decade before this architects and engineers had already begun to try to lighten space-consuming masonry walls.

As early as 1848, store owners were enlarging their show windows by ripping out brick or stone piers and replacing them with slender cast iron pipe columns, thus paving the way for the hollow cast iron fronts so common between 1860 and 1880. And by the 1850's, interior spaces were quite commonly supported by cast iron columns—first in combination with wood girders, and later with wrought iron girders.

In 1862, the Phoenix Column—a hollow circular section built up of four, six or eight flanged, rolled wrought iron segments riveted together—appeared on the scene. Its only similarity to the legendary bird was its tendency to rise to great heights, for its primary use was in high buildings, viaducts, and bridge structures. The name was not fanciful, but derived from the Phoenix Iron Company at Phoenixville, Pa., where Samuel J. Reeves, the son of the company's founder, invented it. The Phoenix Column challenged similar cast iron members for thirty years, disappeared with them in the nineties, and left no successors, except possibly John Lally's concrete-filled pipe.

In a sense, the Phoenix Column was ahead of its time. The real advantage of wrought iron over cast iron was that it could be riveted. But this advantage did not become paramount until the mid eighties, when the problem of windbracing became more and more important as buildings rose higher and higher on the narrow sites so typical of urban development. With cast iron columns, connections had to be hand bolted, allowing more or less play in the joints; and while the use of floor height trusses furnished the rigidity necessary to resist wind pressure, it created new obstacles to design as partitions had to be introduced wherever trusses occurred. With Phoenix Columns, on the other hand, the riveted column-beam connections were rigid enough so that buildings could be windbraced by relatively simple methods. In the Old Colony Building in Chicago, for example, Phoenix Columns were used in conjunction with a system known as "Portal Bracing," in which plate-metal arches were bridged between interior columns to rigidize bays at intervals throughout the entire height of the building.

However, the Phoenix Iron Company was thoroughly convinced of the superiority of wrought iron in general—and the Phoenix Column in particular—long before the connection advantage caused engineers generally to advocate their use.

One advantage of the section was the fact that loads could be applied close to its main axis. If, for example, a load were applied to one side only, it would travel down and around the circular section at an angle so that, at some distance beneath the load, it would become more or less evenly distributed over the entire section of the column.

The Phoenix Iron Company also boasted that the column provided a maximum of strength with a minimum of weight and that, due to the simplicity of its construction, it was the cheapest column on the market.

The use of a hollow circular shaft to support loads inevitably raised the question of rusting within the central core. The early cast iron columns could hardly be painted at all on the inside due to the small inside diameter of the castings, but on the other hand cast iron was thought to withstand rust better than wrought iron. In answer to queries on this point the Phoenix Iron Company stated that ". . . whenever Phoenix Columns are employed, the interior surfaces are thoroughly painted before the segments are riveted together. Such columns have been inspected after twenty years of service, and, although they had occupied the most exposed situations, they have been found uninjured by rust and with the paint still performing its duty."

In order to offset the difficulty of making connections directly to the flanges or to the curved surface of the column, the Phoenix Iron Com-

pany had devised both wrought iron and cast iron seated connections at an early date. The "Improved Phoenix Column," which was first used in 1867 to counter the great weight and vibration of the presses in the Public Ledger Building in Philadelphia, was another step in this direction. The "Improved" column was made by riveting full length vertical filler pieces between the flanges of the segments. The depth of these pieces being greater than that of the flanges themselves, the engineer could readily increase the rigidity of the column throughout its entire height by making the filler strips as wide as he might require. Connections could then be made directly to these single filler pieces instead of to the double flanges.

Another design development, known as the "cross pintle" connection, utilized the same principle, except that, at levels where loads had to be carried, the filler pieces were extended horizontally through the entire width of the column in one dimension and, if needed, similarly at right angles to it. When secured to the column with clip angles, these filler pieces could be extended out far enough to carry two or more lines of rivets. This type of connection made it possible to form a continuous column of any height required, using the cross pintle at the joint so that column sections could be butt-ended against each other without the need for an intermediate bearing plate.

Where Phoenix Columns were not fireproofed, the decorative qualities inherent in their design were sometimes appreciated, as in the Press Room of the Public Ledger Building in Philadelphia. The owners stated that ". . . The effect produced by the projecting flanges and filling pieces is somewhat similar to that of large fluted columns and is quite ornamental. The columns are also painted, with the small round projections which mark the bolts (rivets) bronzed. The whole finish is such as is rarely, if ever, found in an underground apartment."

However, fireproofing for structural members became a necessity for high buildings in the eighties, as they began to pass the heights at which pumping engines could successfully fight fires. Disastrous fires had demonstrated to the public the absolute necessity of obtaining soundly-constructed, fireproof buildings, and many schemes were put forth for constructing fireproof floor arches (wood floor joists were a prime fire hazard), and otherwise fireproofing structural members. In the case of the Phoenix Column, the circular form was, in one sense, an advantage, since it minimized the amount of space taken up by the columns in a given area, but the curved surfaces posed a difficult fireproofing problem. This was largely overcome by "Wight's Patent Process," in which curved sections of terra cotta block were bedded between the flanges with cement mortar, and secured to the column with countersunk metal clips which hooked over the rivet heads on the flanges of the columns. The blocks were then plastered so that the final result was a smooth, circular column.

Due to the great volume of building they enjoyed, New York City and Chicago were in the vanguard in the use of new systems of construction, and in the eighties, the Phoenix Column was used in many of the new high office buildings in those cities. In New York City, for example, the columns were used in the Commercial Cable Building at 20 Broad Street; in the McIntyre (Sherman Bank) Building at the northeast corner of Eighteenth Street and Broadway; for Pulitzer's famous "World Building" at 53 Park Row, on the east side of City Hall Park; and for the R. G. Dun Building at the northeast corner of Reade Street and Broadway.

In the realm of more daring engineering exploits, the high viaducts commanded great admiration. The New York Metropolitan Elevated Railway's west side extension from Eighty-third Street to One Hundred and Fifty-ninth Street, and the Second Avenue elevated line were both built of Phoenix Columns. As described by a contemporary: ". . . The stations in mid-air, the swallow flight of the light trains, the perfect system and discipline of the arrangements, command admiring wonder and make an especially vivid impression on foreign visitors. The lofty, curving trestles of iron near 110th Street were justly characterized by de Lesseps* as one of the most audacious of engineering feats."

Even more audacious was a proposal which was made by David Reeves, the son of the inventor of the Phoenix Column, for a 1000 ft high observation tower to be built of Phoenix Columns for the Centennial Exposition in Philadelphia in 1876. Today no one will remember young David's spectacular proposal, for the tower was never built. But it so intrigued Gustave Eiffel, who saw the model, that he later gave credit to the young American for having inspired him to design his famous steel tower in Paris in 1888.

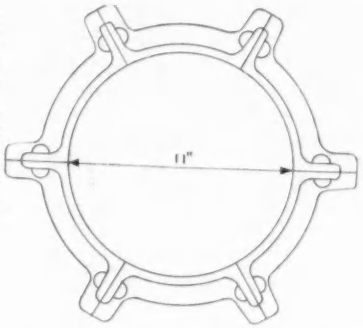
However, Phoenix Columns *were* used for smaller towers, like those which carried railroad tracks over Pennsylvania's Kinzua Valley. Known as the Kinzua Viaduct, the structure was, in many respects, an engineering marvel of its day. Another notable viaduct, the Pecos Viaduct, was built by the Phoenix Bridge Company for the Southern Pacific RR. in western Texas. It had an overall height of 320 ft above a gorge. At the seashore, Ocean Pier, Cape May, and certain parts of the Atlantic City boardwalk in New Jersey were constructed with Phoenix Columns, and throughout the country many bridges were built for railways and highways. The columns were also used in the design of railway stations, ferry houses and industrial buildings. Even after they had ceased to be used for buildings and bridges, they were often used to carry the shoring in mines.

In the case of office buildings, Phoenix Columns were usually used where loads were greatest, for the central or inner columns. For bridges or viaducts, they were used for the principal compressively loaded members. Tension members were usually flat eye-bars or rods, so that, as assembled, such structures had a visual expressiveness, lost to most steel structures of today, in which compressive and tensile members each had their own distinctively characteristic shapes.

In its basic design, the Phoenix Column possessed many advantages: the flanges lent considerable rigidity to the column; the circular section provided even distribution of material. But by the late 1880's, Bessemer steel was widely used for bridges, and a few daring souls had already used rolled steel bridge sections for the then-newborn "skyscraper." In the nineties, Zee-bar and rolled "H" columns began to take the lead over the Phoenix Column and other circular iron columns for several reasons. One was the greater ease in making connections. Another was the fact that a section having a radius of gyration which was greater in one direction than in the other provided a positive advantage where heavier loads occurred on only one or on opposite sides of a column.

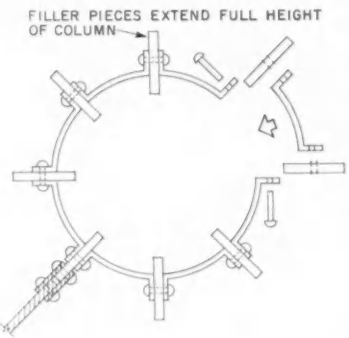
And so the Phoenix Column disappeared. But in its day, it was a radical departure from existing structural forms and an imaginative solution to existing structural problems, even though its usefulness was limited by technical difficulties. Perhaps it can still give us food for thought in this day of mass production and technical proficiency.

*Viscount Ferdinand M. de Lesseps, French diplomat and promoter of the Suez Canal (1805-1894).

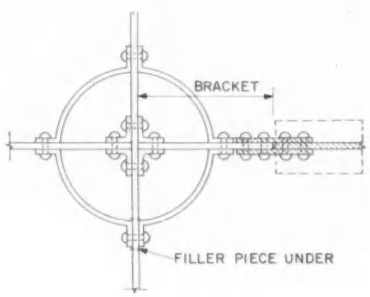


New York Public Library

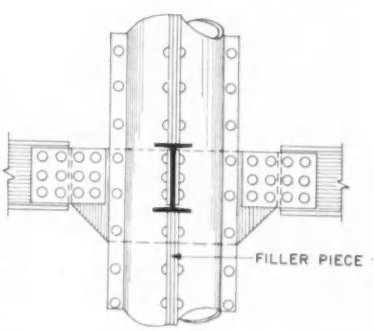
Phoenix Columns were formed by riveting together four, six or eight wrought iron segments, depending on diameter needed



Vertical filler pieces between flanges of "Improved Phoenix Column" added to rigidity, ease of making column-beam connections



A later development, the "cross pintle" connection had filler strips extending horizontally through entire width of column



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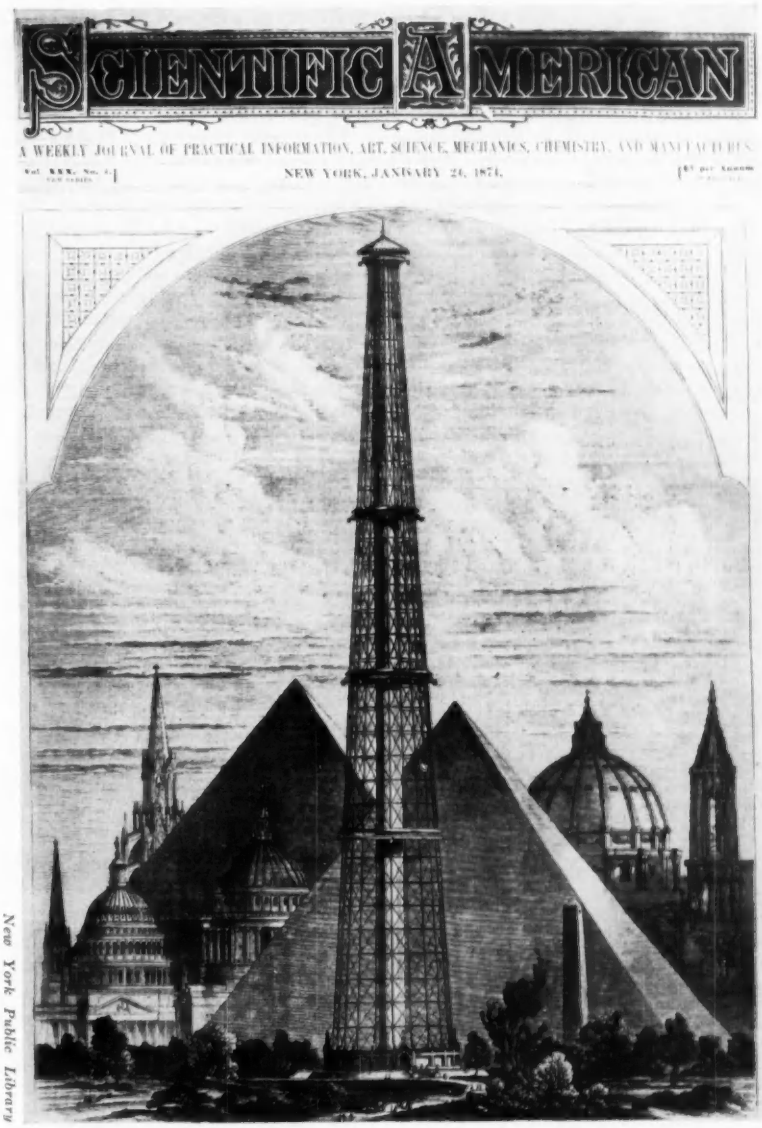
SCIENTIFIC AMERICAN

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. XXX. No. 4.] NEW YORK, JANUARY 24, 1874. [$3 per annum

New York Public Library

Proposal for 1000-ft tower of Phoenix Columns (above) was front-page news in 1874. Note its height as compared to "skyscrapers" then existing. Other "audacious engineering feats" included structures like New York City's Metropolitan Elevated Railway (below)

New York Public Library

HIGH VELOCITY SYSTEM CUTS COST, ADDS SPACE

By taking full advantage of the money-saving possibilities inherent in a dual duct, high velocity system, the mechanical engineering department of Welton Becket and Associates, architects and engineers, managed to air condition the new Texas Company building in Los Angeles for about $2.90 a square foot—as compared to a going price of from $3.25 to $4.00 for equivalent systems in the same area. In addition, since the high velocity ducts could be housed in a shallower floor-ceiling sandwich than could conventional ducts, it was possible to squeeze in an extra story without exceeding Los Angeles' then existing 150-ft height limit.

Other than the obvious one of maintaining a comfortable building environment, there were two primary design criteria: to locate mechanical equipment so that it occupied no rentable area, and to preserve flexibility so that changes in the space layout could be accomplished with a minimum of expense and inconvenience. The former was satisfied by placing the fan rooms in the basement and on the roof, and by using the service core of the building as an exhaust shaft. The latter was met by using a hung ceiling to support the acoustical tile, fluorescent light fixtures, air conditioning diffusers, and return air registers.

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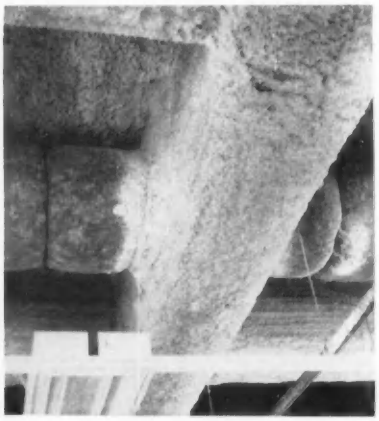

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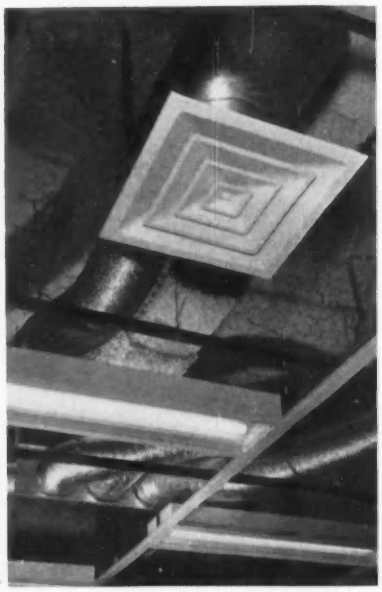

4

1) Compact dual duct, high velocity system added bonus story to Los Angeles' limit-height Texaco Building. Three elevations are glazed with heat-reducing glass. 2) Small high velocity ducts pass through girders, reduce required depth of ceiling space. 3) Designed for maximum flexibility, hung ceiling supports movable diffusers and return air registers. 4) Flexible duct connects diffusers with mixing box. Ceiling forms plenum for return air

Since this equipment is not attached to the ceiling suspension system, it can be moved as easily as the tenants' partitions and furnishings. Diffusers are connected to the mixing boxes with 8 to 10 ft of flexible duct.

The designers of the system attribute their 10 to 25 per cent savings to several factors:

1) There is no separate return air system. Air entering the return air registers moves through the "plenum" space between the suspended ceiling and the floor above until it reaches the intake to the high velocity (2400 cfm) return air duct in the central service shaft. According to the designers, this saved at least fifty cents a square foot on the return air system alone.

2) Refrigeration equipment was closely sized to the estimated load of 700 tons. The two 350 ton compressors that were installed give no excess refrigeration capacity. (As much as 50 per cent standby capacity is sometimes specified.)

3) Air conditioning loads were reduced by some 117 tons through the use of *Glare-X*, a heat-reducing glass made by sealing two layers of clear glass with a sheet of *KoolShade* sunscreen between. The sunscreen is essentially a venetian blind with tiny (.05 in. wide) horizontal louvers permanently set at the seventeen degree angle believed to be optimum for reflecting solar heat and glare at all hours of the day, throughout the year.

4) Materials for insulation and duct work were selected so that the insulation could be applied in the contractor's shop rather than in the field. This cut labor costs, since work could be begun earlier, using men already employed by the contractor.

5) The specifications were carefully written to encourage competitive bidding. Because no "pet" equipment or subcontractors were written in, each prospective bidder had equal opportunity, including equal access to all necessary equipment.

Also noteworthy is the care that was taken to eliminate noise in the system. All of the fans, pumps and other rotating equipment were installed on spring-supported inertia blocks to keep the vibrations from being transmitted to the building. Special sound absorbers were installed in the hot and cold ducts, and the fan plenums for both discharge and supply fans were lined with acoustical material to further quiet the system.

Durable, Incombustible Building Panel

Above: Glasweld panels offer a low cost, incombustible facing material for exterior use. In a serious fire at Belgium's new Brussels Airport, *Glasweld* curtain wall panels like those shown above were undamaged by water, heat or smoke

Right: In this restaurant kitchen, prefinished *Glasweld* panels provide an inexpensive wall finish that is impervious to grease and dirt, can be easily maintained, and will not add fuel to a "flash" fire

Weldwood Glasweld, a completely incombustible, prefinished building panel for exterior and interior use, is expected to find widespread application in the field of school and institutional architecture.

The enamel-surfaced, asbestos reinforced panels are imported from Belgium, where they have been manufactured by the Eternit Corporation for the past five years. Widely used in Western Europe, they are suitable for curtain wall and fascia components, soffits, canopy ceilings, partitions, wainscoting, plain or perforated ceilings, kitchen and bathroom walls and countertops. Their principal assets, other than fire resistance, are durability and low cost. In a school, for example, *Glasweld* panels could eliminate much interior and exterior painting, a large percentage of more costly glazed block and tile, and furring, lathing and plastering in many areas. Initial savings would of course be supplemented by reduced maintenance costs.

The standard 4 by 8 ft panels are stocked in $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{5}{16}$ in. thicknesses and a range of ten colors. Two patterns—a spatter and a linen weave—are available, as well as a perforated style for ceiling use. An additional twenty colors and patterns can be had on special order.

In spite of its ceramic-like appearance, *Glasweld* can be cut with a carborundum wheel, or scored and snapped. It is easily drilled for mechanical fastening, or may be applied with mastic over almost any regular surface. The $\frac{1}{8}$ in. thickness may be nailed without pre-drilling. A variety of moldings for joint and edge treatment will be available. for *Glasweld* installation. *United States Plywood Corporation, 55 West 44th St., New York 36, N. Y.*

Budget-Priced Closed-Circuit TV System

A closed-circuit television system priced "well below" most custom-designed systems currently on the market is designed to stimulate greater use of the medium in schools, industry, commerce, and other fields where price has been a deterring factor to full utilization of closed-circuit television.

The camera in the new system is a vidicon-type weighing fifteen pounds. It requires no special lighting and will transmit an image on channels 2 through 6 to any standard, home-type receiver. The camera has a turret mount for three different lenses, but may be had with one, two or three lenses as required.

A spokesman for the manufacturer has indicated that the system may be particularly useful in schools for science demonstrations, lectures, and the general dissemination of information. Another suggested use is as a shoplifting deterrent in stores and supermarkets. *Home Electronics Div., Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.*

Water-Repellent Masonry Fill Insulation

A new low cost water-repellent insulation fill is expected to permit the use of comparatively inexpensive masonry walls without additional insulation or costly finish materials. According to the manufacturer, a block or cavity wall insulated with the new masonry fill has a heat transmission rating well below the .27 "U" coefficient required by FHA in most sections of the country. Since the fill is water-repellent, its insulating value is not affected by moisture within the wall. Moreover, its use makes it possible to insulate a masonry wall at a cost lower than that of other insulation methods.

A free-flowing granular material, the fill is easily installed by pouring it directly into the cores of the block or the wall cavity. It is said to flow readily into all voids and crevices, leaving no uninsulated areas. Filling can be done at floor line or before capping; block walls can also be filled at the window sill line. *Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.*

more products on page 252

The Pratt & Lambert ARCHITECTURAL SPECIFICATION MANUAL, Ninth Edition (A.I.A. 25-C), is intended to be a complete and reliable reference of painting procedures and specifications. The 260-page manual leads off with product descriptions and an index of surfaces, followed by general conditions, master specifications and selected specifications for specific building types. A complete color section gives basic information on the use of color, as well as more than one hundred Calibrated Color Sequences grouped by job type, light reflectance, and compatibility with "fixed color factors" such as floor tile and ceramic dadoes. There is also a "problem and answers" section which includes a discussion of painting problems and their solution *Pratt & Lambert, Inc., 75 Tonawanda St., Buffalo 7, N. Y.*

Tork Time Controls

(A.I.A. 31-I-24) General Catalog No. 159 features a section devoted to an explanation of switching and timing, followed by descriptions of specific light and power time switches. 8 pp. *Sales Dept., Tork Time Controls, Inc., Mount Vernon, N. Y.*

Cork Tile Specification

(A.I.A. 23-G) New Industry Specification covers physical properties, dimensions, etc., of granulated cork tile in three types of finish. *Cork Institute of America, 342 Madison Ave., New York 17, N. Y.*

Insulating Concrete Catalog

Bulletin No. C11-1959 gives specifications and engineering data, including fire ratings, for *Permalite* insulating concrete for roof decks and floor fills. Also available: Bulletin No. F60-1959, which gives specification and application data for *All-weather Crete* lightweight roof insulation; and Bulletin No. P11-1959, which gives plastering specifications and fireproofing data for *Permalite* plaster aggregate. *Mining and Mineral Products Div., Great Lakes Carbon Corp., 612 So. Flower St., Los Angeles 17, Calif.*

Architectural Metal Work

Illustrates and gives details and mechanical data for a wide variety of architectural metal products in bronze, aluminum and stainless steel. *Newman Brothers, Inc. 660 West 4th St., Cincinnati 3, Ohio*

Kem Tech Furniture

(A.I.A. 35-E) Describes and illustrates *Kem Tech* line of stock laboratory furniture and equipment, and gives eight science room plans with equipment lists, and mechanical service roughing-in details for each item shown. 28 pp. *Kewanee Manufacturing Co., 5046 S. Center St., Adrian, Mich.*

Diaflo Air Conditioners

Bulletin 9327 outlines features of *Diaflo* air conditioners and gives detailed descriptions of their major components. Tables showing cooling ratings, heating capacities and water pressure drop are supplemented by specifications and dimensional drawings. 12 pp. *American Blower Div., American Standard, Detroit 32, Mich.*

Reinforced Plastic Panels

(A.I.A. 26-A-9) Contains technical data; heat and light transmission values; weathering and load carrying charts; a list of sizes, colors and corrugations; construction details; and specifying information on *Filon* fiberglass-and-nylon-reinforced plastic panels. 4 pp. *Filon Plastics Corp., 2051 E. Maple Ave., El Segundo, Calif.*

Metal-Clad Switchgear

Bulletin 2804-1A gives information on construction and performance features, ratings, dimensions, preferred locations and arrangements of circuit elements for indoor and outdoor type 4160v metal-clad switchgear. 24 pp. *I-T-E Circuit Breaker Co., 1900 Hamilton St., Philadelphia 30,* Pa.

Electric Water Coolers

Catalog 59 describes, illustrates, and gives capacity data, and technical and roughing-in details for each model in the Cordley line of electric water coolers. Hints for proper cooler selection, location and installation are also included. 20 pp. *Cordley & Hayes, 443 Fourth Ave., New York 16, N. Y.*

Induction Circulators

Bulletin 1100-B101 contains complete selection information, including dimensional data, performance ratings, gravity heating capacities and specifications on *Flexular* series of induction circulators for high-pressure induction air conditioning systems. 28 pp. *Advertising and Marketing Promotion Dept., Worthington Corp., Harrison, N. J.*

One-Piece Pipe Insulation

(A.I.A. 37-D-2) Includes descriptive material, technical data and specifications for *Fiberglas* one-piece pipe insulation for hot and cold water and low pressure steam lines. 8 pp. *Owens-Corning Fiberglas Corp., Dept. 1-IN-477, Toledo 1, Ohio*

Alzak Processed Reflectors

. . . for the Optimum in Light Reflection (A.I.A. 31-F-24) covers finishes, service, specifications and performance of *Alzak* aluminum reflectors. 12 pp. *Aluminum Company of America, 755 Alcoa Bldg., Pittsburgh 19, Pa.*

Architectural Builders Hardware

(A.I.A. 27-B) Presents specifications, application data and product features for four major lock lines, rectangular and standard liquid type door closers, exit devices, and miscellaneous builders hardware. Form No. SW-9-58, 16 pp. *Sargent & Company, New Haven 9, Conn.*

**Additional product information in Sweet's Architectural File, 1959*

more literature on page 276

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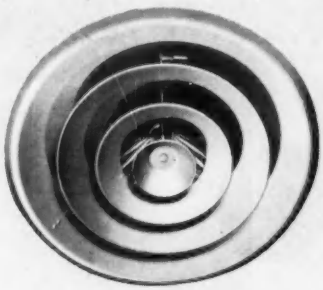

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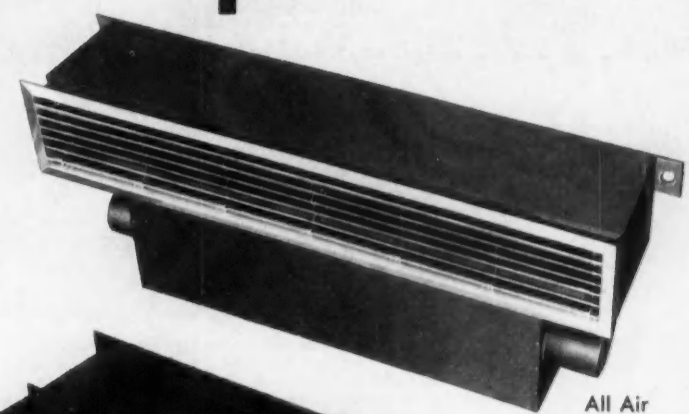

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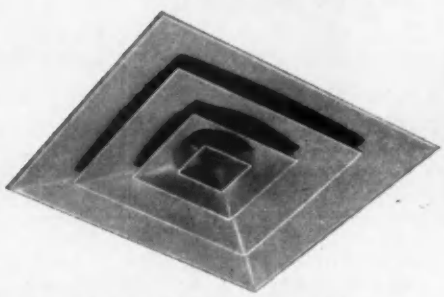

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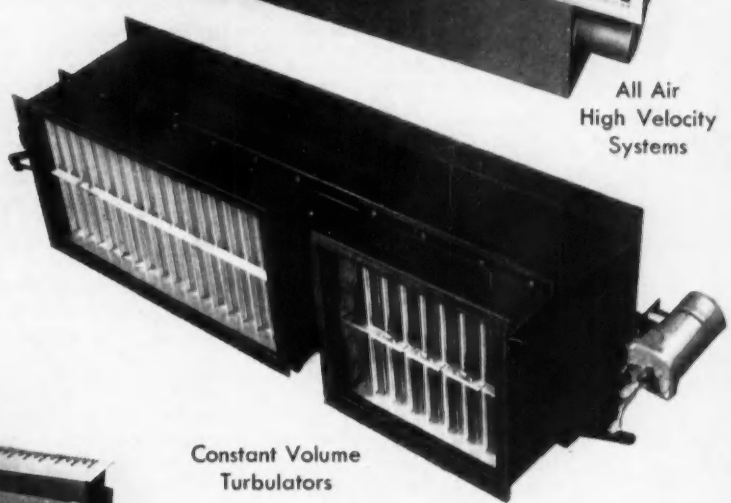

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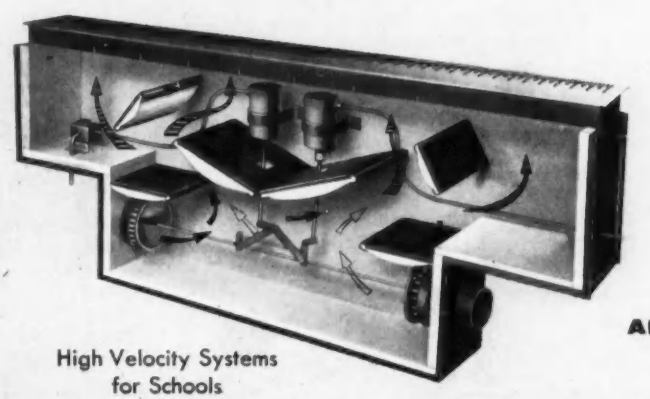

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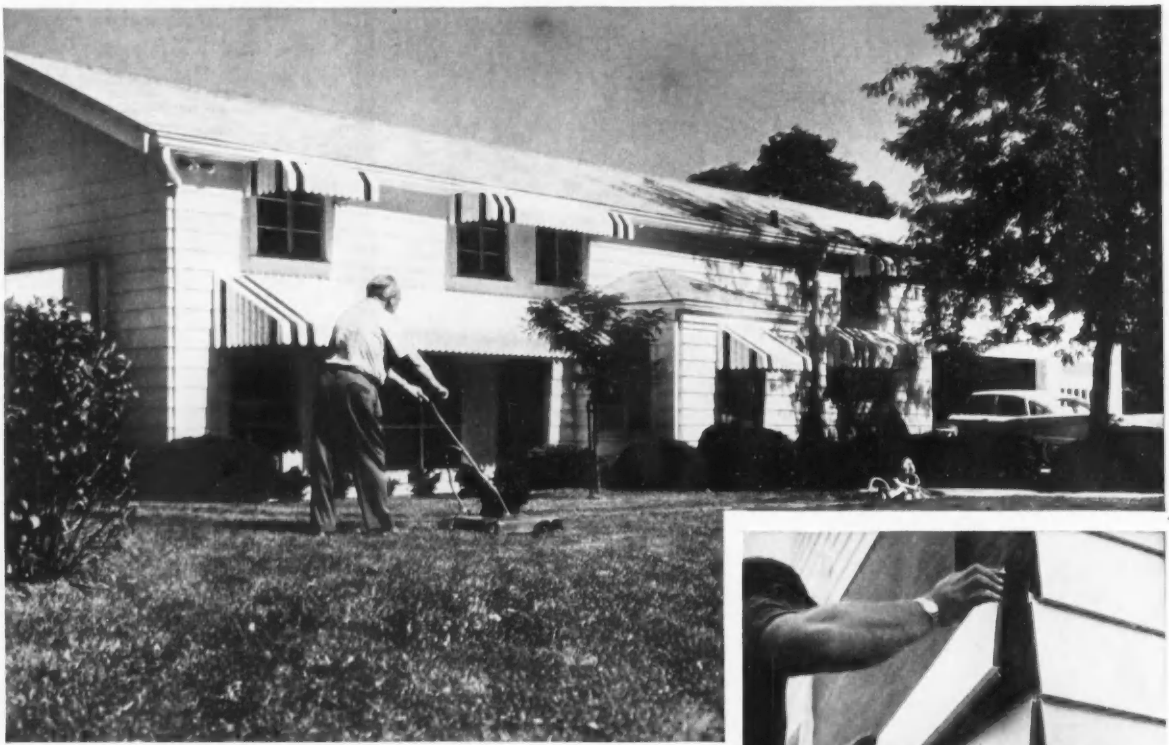
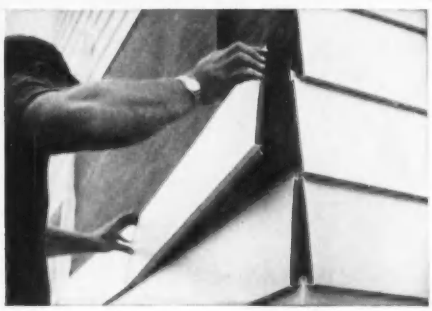


Aluminum awnings and aluminum siding made by Hastings Aluminum Products, Inc., Hastings, Michigan, in a wide range of colors using coatings manufactured by Sherwin-Williams, Inc., Cleveland, Ohio, made with Geon. B.F.Goodrich Chemical Company supplies the Geon polyvinyl materials only.



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Both the siding and awnings of this house are made of aluminum coated with Geon polyvinyl resin. They will not need painting for a long, long time because this Geon coating is really tough and durable. Both sides of the aluminum are coated before the siding and awnings are fabricated. Then the metal is formed, bent, punched and even applied to the house—all without affecting the appearance or performance of the finish.

Extensive laboratory and field tests have proved that this enamel-like coating made with Geon produces outstanding appearance, as well as weather-resistance far beyond what is available from conventional finishes. The manufacturer warrants this finish against blistering, cracking or crazing for 10 years. All that's needed to restore its excellent appearance is periodic washing.

Coatings made with Geon offer superior abrasion, electrical and chemical resistance—reasons why Geon is often the key to a new or improved product. For more information, write Dept. AW-1, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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PLASTICS AND FIRE RESISTANCE REQUIREMENTS: 1

From the *Code Manual* (Feb. 1959) of the New York State Building Code Commission

With the great influx of plastics into building construction, there has been some doubt in the past as to how these new materials should be treated in connection with building codes. To help alleviate this situation, *A Model Chapter On Plastics for Inclusion in A Building Code*, was drafted in 1956 by The Society of the Plastics Industry in cooperation with The Manufacturing Chemists' Association, Inc. Now the New York State Building Code Commission has included a new section in the revised edition of their Code Manual on "Plastic Materials" published this February. It is generally patterned after the aforementioned *Chapter on Plastics*, and can be related to a performance type building code. The basic material has been rearranged and tabulated, and put into an easy-to-use form. As such it should prove useful to the readers of ARCHITECTURAL RECORD.

General

An acceptable plastic material is one which is suitable functionally for the purpose for which it is to be used, which has a flame-spread rating of not more than 225 [This is the flame spread rating given by the Underwriters' Laboratories tunnel test], and which in burning will not give off excessive amounts of smoke or objectionable gases.

Classification

Class A—Plastic materials, reinforced or unreinforced, which are self-extinguishing or which stop burning when removed from the igniting flame.

Class B—Plastic materials which are not self-extinguishing and are reinforced with 20 per cent or more, by weight, of glass fiber or other noncombustible material.

Class C—Plastic materials which are not self-extinguishing and are reinforced with less than 20 per cent but not less than 10 per cent, by weight of glass fiber or other noncombustible material.

Class D—Plastic materials other than Class A, B, or C.

Structural Requirements

Plastic materials, assemblies, connections, fastenings and the structural members to which they are attached shall conform to the general structural requirements of the [governing code]. Provisions shall be made for expansion and contraction.

Interior Finish and Trim

Plastic materials for interior finish and trim shall conform to the requirements of the [governing code].

Glaze of Openings

Plastic materials may be used for glazing doors and sash and light transmitting panels in exterior walls which are not required to have a fire-resistance rating. For limitations, see Table A.

Roof Panels

In roofs which are not required to have a fire-resistance rating and in roofs where sprinkler protection is provided, panels of plastic materials may be used, except that such plastic roof panels shall not be used directly over assembly spaces, or directly over areas [used for the following: institutional buildings such as homes for ill and infirm; hospitals and clinics; jails, prisons and mental institutions; and similar building types] or over areas in which flammable or explosive materials are made, stored, or handled. For limitations see Table B.

TABLE A

Classification of plastic	Type of building [2]	Building distance separation	Maximum aggregate area, per cent of exterior wall area	Maximum panel area in sq ft	Maximum panel size		Minimum distance between panels	
					Horizontal length in feet	Height in feet	Horizontally in feet	Vertically in feet
A or B	2, 3 or 4	10 to 20	10	100	25	12	4	8 [1]
A or B	2, 3 or 4	20 to 30	15	150	50	12	3	6 [1]
A or B	2, 3 or 4	30 or more	30	300	100	12	2	4
A or B	5	30 or more	30	300	100	12	4	8 [1]
C or D	2, 3, 4 or 5	30 or more	15	150	100	12	4	8 [1]

1. Four feet for panels not more than 6 feet in horizontal length.
2. Type 2, noncombustible; Type 3, heavy timber; Type 4, ordinary; Type 5, wood frame.

TABLE B

Classification of plastic	Minimum slope of roof panel	Maximum aggregate area, per cent of roof covered	Maximum panel area in sq ft	Minimum distance between panels	
				Along slope of roof in feet	Horizontally in feet
A	4 on 12	33⅓	300	10	8
B	4 on 12	25	300	10	8
C or D	4 on 12	15	100	10	8

5805

GOOD IDEAS shape up fast with beautiful MARLITE paneling

There's no limit on imaginative interiors with versatile Marlite paneling. This easily-installed material in Loewy-styled "Companion Colors," distinctive wood and marble patterns gives a fresh, modern look to any room in the house—new or remodeled.

Large sheets, planks, blocks, hollow-core Korelock are dimensioned for standard modular sizes. They fit right, look right, go up quickly with minimum cost "in place." And Marlite's melamine plastic finish stays like new for years with an occasional damp cloth wiping. That means low maintenance, higher customer satisfaction.

Get complete Marlite details for any "interior idea" from your building materials dealer, Sweet's File—or write Marlite Division of Masonite Corporation, Dept. 405, Dover, Ohio.

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MARLITE IS ANOTHER QUALITY PRODUCT OF MASONITE® RESEARCH

Marlite branch offices and warehouses located at: 204 Permalume Place, N.W., Atlanta 18, Georgia • 18 Moulton Street, Cambridge 38, Mass. • 1925 No. Harlem Ave., Chicago 35, Illinois • 8908 Chancellor Row, Dallas 35, Texas • 1577 Rio Vista Ave., Los Angeles 23, Calif. • 2440 Sixth Avenue So., Seattle 4, Washington • Branch office: 101 Park Avenue, New York 17, N. Y.

PLASTICS AND FIRE RESISTANCE REQUIREMENTS: 2

From the *Code Manual* (Feb. 1959) of the New York State Building Code Commission

Skylights

Plastic materials may be used in skylights except those directly over assembly spaces, over spaces [used for institutional buildings, such as homes for ill and infirm; hospitals and clinics; jails, prisons and mental institutions; and similar building types] or over areas in which flammable or explosive materials are manufactured, stored, or handled. Material used in skylights over exits or shafts shall be Class A. Such skylights shall be mounted on a noncombustible curb at least 12 in. high above the roof in the following building types: apartments, hotels, motels, etc.; business; mercantile; industrial; storage; assembly; dormitories; and similar types. The curb should be 6 in. high above the roof of one- or two-family dwellings. For limitations, see Table C.

Exterior Wall Facing

Plastic material may be used for facing exterior walls provided it is attached to a noncombustible backing. For limitations, see Table D.

Luminous Ceilings or Light Diffusing Panels

Plastic materials may be used in luminous ceilings or in light-diffusing panels in buildings of low hazard occupancy, and in buildings of moderate or high hazard occupancy equipped with a sprinkler system. Where used in exits or over assembly space in any building; in buildings of mercantile and dormitory occupancies or over hazardous areas in which highly flammable or explosive materials are manufactured, stored or handled, the plastic material shall be class A and have a heat distortion temperature of at least 225 F. Plastic luminous ceilings or plastic light diffusing materials, in mounted or recessed fixtures, in other rooms and spaces, and having an area exceeding 30 per cent of the area of the room shall conform to the flame spread requirements for interior finishes or be of class A material which will distort and fall from its mounting at an ambient temperature at least 200 F below its ignition temperature. Individual sheets of such material shall not exceed 75 sq ft in area between supports. Luminous ceilings below sprinkler heads shall be of material which will distort and fall from its mounting at a temperature at least 15 degrees lower than the operating temperature of the sprinklers.

Partitions

Class A and B plastic materials may be used for partitions wherever partitions of wood or other combustible materials are permitted, providing the surfaces conform to the applicable code requirements for interior finishes.

Note: *the Code Manual can be used as a guide by architects and engineers in interpreting the New York State Building Construction Code. It is not law, but purely advisory.*

TABLE C

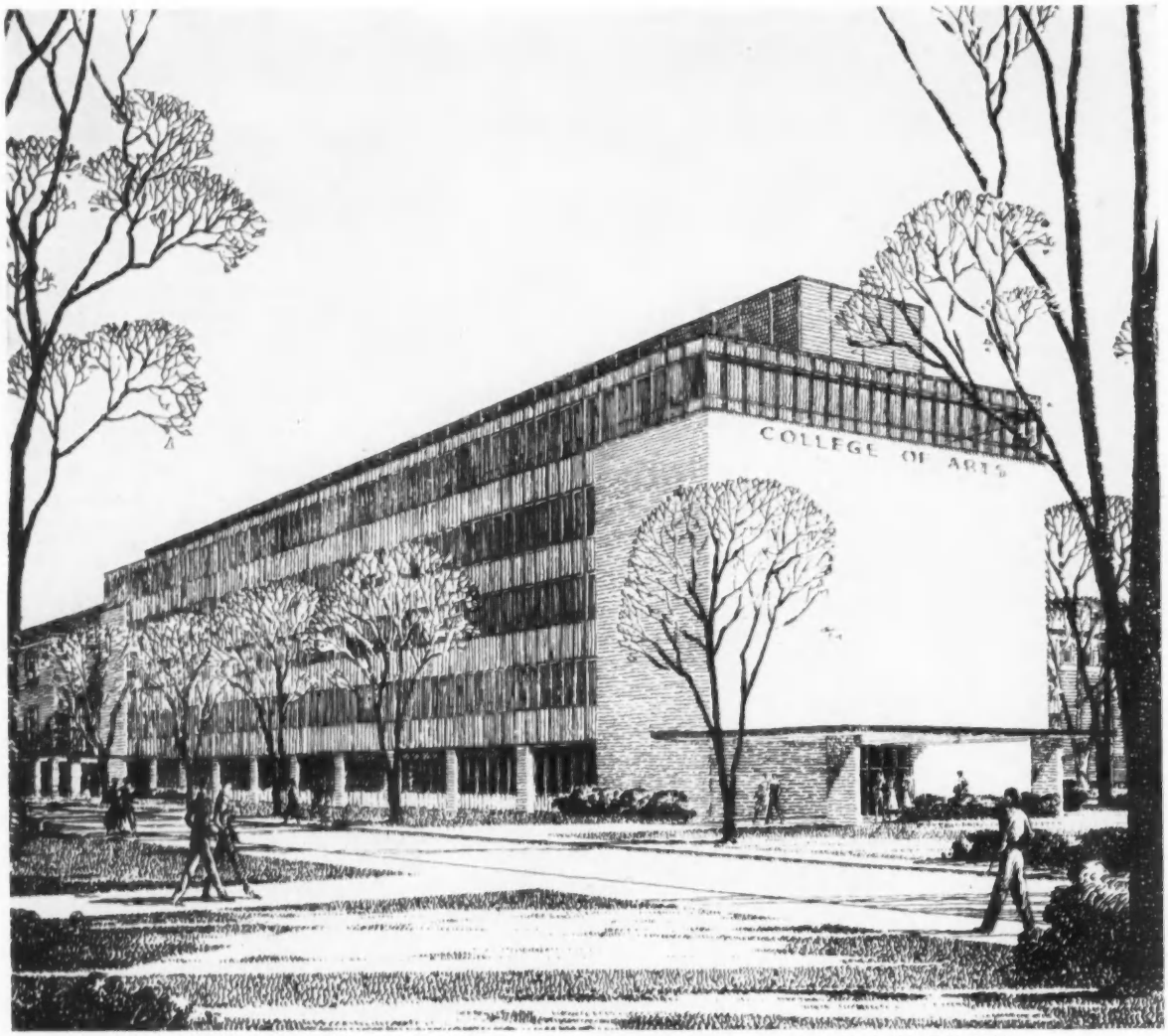
Classification of plastic	Minimum slope [1] of skylight	Maximum aggregate area, per cent of room covered	Maximum skylight area in sq ft	Maximum dimension along slope of roof in feet	Minimum distance between skylights or to exterior wall of building in feet
A	3 on 12	33⅓	300	10	5
B	3 on 12	25	300	10	5
C & D	4 on 12	15	100	8	5

[1] *Rise of dome-shaped skylights at least 10 per cent of maximum span of 5 inches, whichever is greater.*

TABLE D

Classification of plastic	Maximum height above grade		Maximum panel area [1]		Minimum distance between panels	
	Within fire limits	Outside fire limits, feet	Within fire limits, sq ft	Outside fire limits, sq ft	Vertically in feet	Horizontally in feet
A	1 story	35	150	225	6	3
B	1 story	35	150	225	6	3
C	1 story	35	50	75	6	3
D	Not permitted					

[1] *No dimension of any panel shall exceed 15 feet.*



CONTRACTOR: GEO. W. LATHROP & SON, INC. ARCHITECT: HAYS & RUTH. ALUMINUM MATERIALS: ALUMINUM COMPANY OF AMERICA

Curtain walls for halls of ivy

Ohio State chooses North American Architectural Metals for its new College of Arts and Sciences Building

North American Aviation is fabricating and erecting the curtain walls that will sheathe Ohio State University's Denney Hall.

The 5-story building will contain classrooms and offices for the College of Arts and Sciences. The panels are of porcelainized steel mounted in matching color-anodized aluminum frames.

When an architect designs with North American's architectural metals, he has the esthetic freedom to create a structure that is right for its function, right for its time. North American's custom-design service gives him this fluidity of expression.

But North American's time-proved ability to mass-produce any metal in any form also gives him a building that is economical to construct, maintain, own. From its vast experience with the precision metalwork required for military aircraft, North American has found practical answers to the major problems of curtain wall construction: laminating, fastening, sealing, expansion and contraction.

Explore your next curtain wall design with the architectural metals engineers at the Columbus Division of North American. Predicted result: a more beautiful building at a lower cost.

ARCHITECTURAL METALS

THE COLUMBUS DIVISION OF NORTH AMERICAN AVIATION, INC.

Columbus, Ohio

CHIMNEY SIZING FOR MEDIUM SIZED BOILER PLANTS, with particular application to hospitals

ARTHUR L. SPAET, *Partner, Slocum & Fuller, Consulting Engineers*

In the very early stages of hospital planning it is necessary to establish the general architectural outlines and preliminary structural framing for the building. Before any detailed design has been started on the boiler plant, the approximate size of the chimney must be determined. Manufacturers' catalogs usually give a recommended chimney size for a small plant, suitable for a school or modest sized building. For large plants in the power and heavy industrial fields, the design will usually be done by a specialist. The hospital plant falls in between, and information for sizing chimneys has been conspicuously lacking.

The applicable principles have been well established. The problems of draft, chemistry of combustion, the use of draft fans, etc. are available in texts and trade literature. However, the fundamental problem of architect and engineer in the early design stage is that of establishing a chimney size without doing a week's worth of calculation. The table given here can be used for boiler plants other than hospitals provided the conditions below apply. This table will suffice for *preliminary design* under the following conditions and assumptions. Final chimney sizing must be engineered in detail for each application:

1. Elevation of plant—sea level to 500 ft above sea level.
2. The chimney is of masonry or brick construction.
3. Minimum chimney height—90 ft.
4. Average chimney temperature—540 F.
5. Boiler pressure—125 psi.
6. A forced draft fan or induced draft fan will be used to overcome boiler and wind box losses.

Minimum chimney height is that required to clear the flue gases of the highest nearby building or roof; or to clear the highest part of the hospital itself to prevent a health or nuisance hazard. A suggested minimum height is 80 ft above the breeching although a minimum of 90 or 100 ft is preferable.

A round chimney section is preferable to a rectangular section. Where architectural considerations require a rectangular appearance, a circular inside construction is strongly recommended. In addition the fire underwriters express a strong preference for round chimney sections for safety reasons.

Lb stm./hr (Peak load)	Lb stm./hr (Incl. 30% standby)	Boiler hp (Corresponding to previous column)	Oil Pump Rate gal./hr	Flue Gas Cfm Oil—above Coal—Below	Flue Gas lbs./hr Oil—above Coal—Below	Chimney Diam. ft.	Velocity ft./min
20,000	26,000	750	520	17,000 20,400	31,000 47,000	4½ 5	1,060 1,050
25,000	32,500	950	650	21,000 25,000	51,000 57,000	5 5½	1,070 1,050
30,000	39,000	1,130	780	25,000 30,000	61,000 70,000	5½ 6	1,050 1,060
40,000	52,000	1,500	1,000	34,000 41,000	81,000 94,000	6 7	1,200 1,070
50,000	65,000	1,900	1,200	42,000 50,000	100,000 117,000	7 7½	1,090 1,130

continued from page 226

Welded Wire Mats Meet Transmitter Station's Grounding Requirement

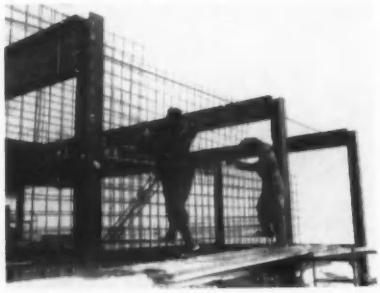
Two special requirements governed the structural design of the new Naval Transmitting Station in Cutler, Maine: the Navy specified flush reinforced concrete walls with no offsets for columns; and since large inside areas of the building were to be shielded with copper lining, all other metal in the structure had to be grounded.

Although a 10-in. wall would have completely encased the steel columns, the engineers decided on a 12-in. thickness, reasoning that the greater thickness would ease placement of concrete and add stiffness.

Given wall thickness, the selection of temperature reinforcing should be a matter of simple computation. But in this case, the design was complicated by the grounding requirement, which meant that there could be no loose metal-to-metal contact and that reinforcing members would have to be welded at every intersection. To keep on-site welding to a minimum, individually placed reinforcing bars were replaced by 8- by 10-ft mats of pre-welded wire fabric. These were joined by welding cross wires of each mat at all laps between sheets, on all four sides. Where mats crossed columns, a weld was required every four feet; and brazed "jumpers" were specified at intervals to assure positive electrical connection between the inner and outer lines of reinforcing. Reinforcement for the inner, nonbearing partitions was similarly welded and grounded, as was the ground slab wire reinforcing and the wire mesh with which the columns were wrapped. Finally the entire structural and reinforcing steel system was connected to copper clad steel grounding rods around the outer wall of the building. These in turn were connected to the antenna-ground system, completing the electronic grounding circuit.

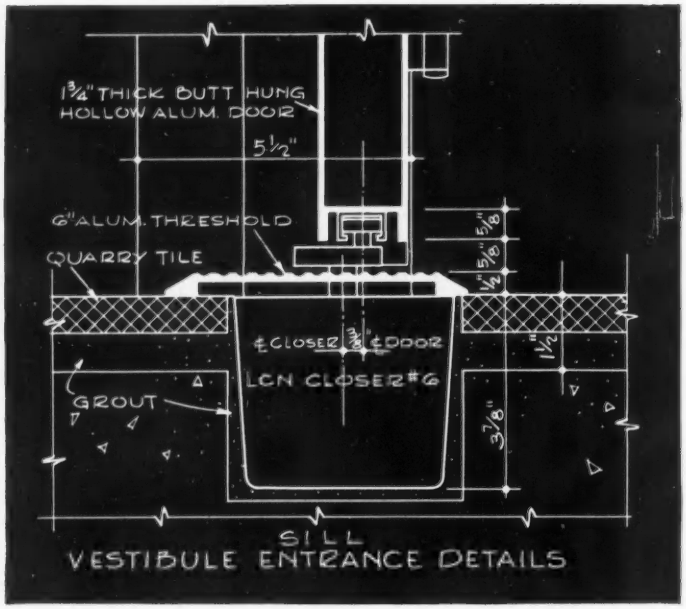
The project was designed by Hayden, Harding & Buchanan, Inc., of Boston, and James W. Sewall Company of Old Town, Maine.

more roundup on page 242



Steel workers position inner line of temperature reinforcing behind previously placed mat of heavy welded wire fabric

Inner and outer mats are welded at laps (above), joined by brazed leads. Leads also join mats to structural members (below)



CONSTRUCTION DETAILS

for LCN Floor Type Door Closer, Shown on Opposite Page

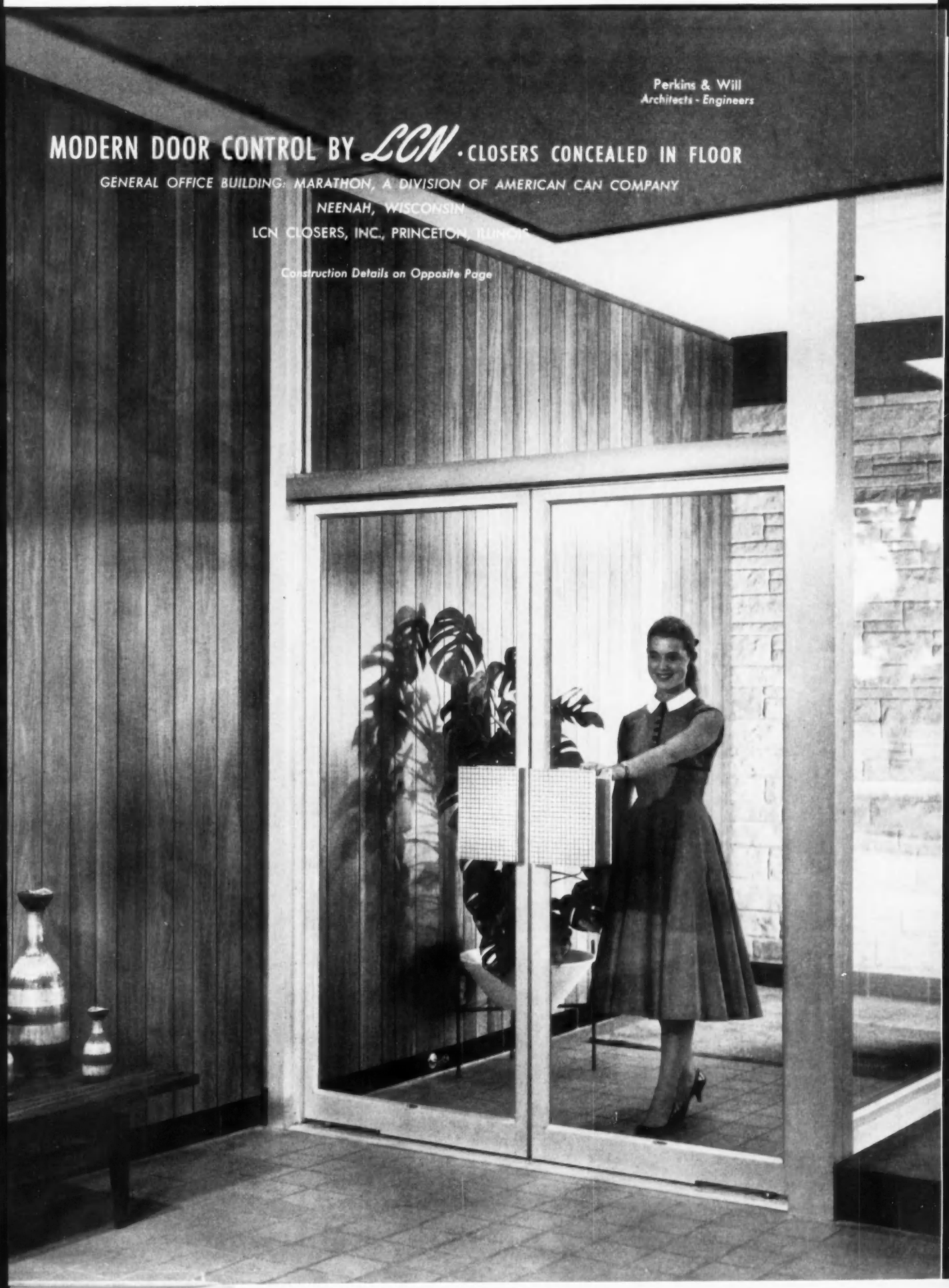
The LCN Series 2-4-6 Closer's Main Points:

1. Full rack-and-pinion, two-speed control of the door
2. Mechanism concealed; lever arm disappears under door
3. Door hung on regular butts, its weight carried independently of closer
4. Closer easily adjusted or serviced without taking door down
5. Installed with or without threshold; may be flush with threshold or with floor
6. Used with wood or metal doors and frames

Complete Catalog on Request—No Obligation
or See Sweet's 1959, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario


Perkins & Will
Architects - Engineers
MODERN DOOR CONTROL BY LCN · CLOSERS CONCEALED IN FLOOR
GENERAL OFFICE BUILDING: MARATHON, A DIVISION OF AMERICAN CAN COMPANY
NEENAH, WISCONSIN
LCN CLOSERS, INC., PRINCETON, ILLINOIS
Construction Details on Opposite Page

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Beth-Co-Weld steel pipe is available, black and galvanized, in sizes from ½ in. to 4 in. nominal, and in lengths of 21-ft (±1 in.) or in random or cut lengths. Next time you specify general purpose pipe, ask for Beth-Co-Weld.

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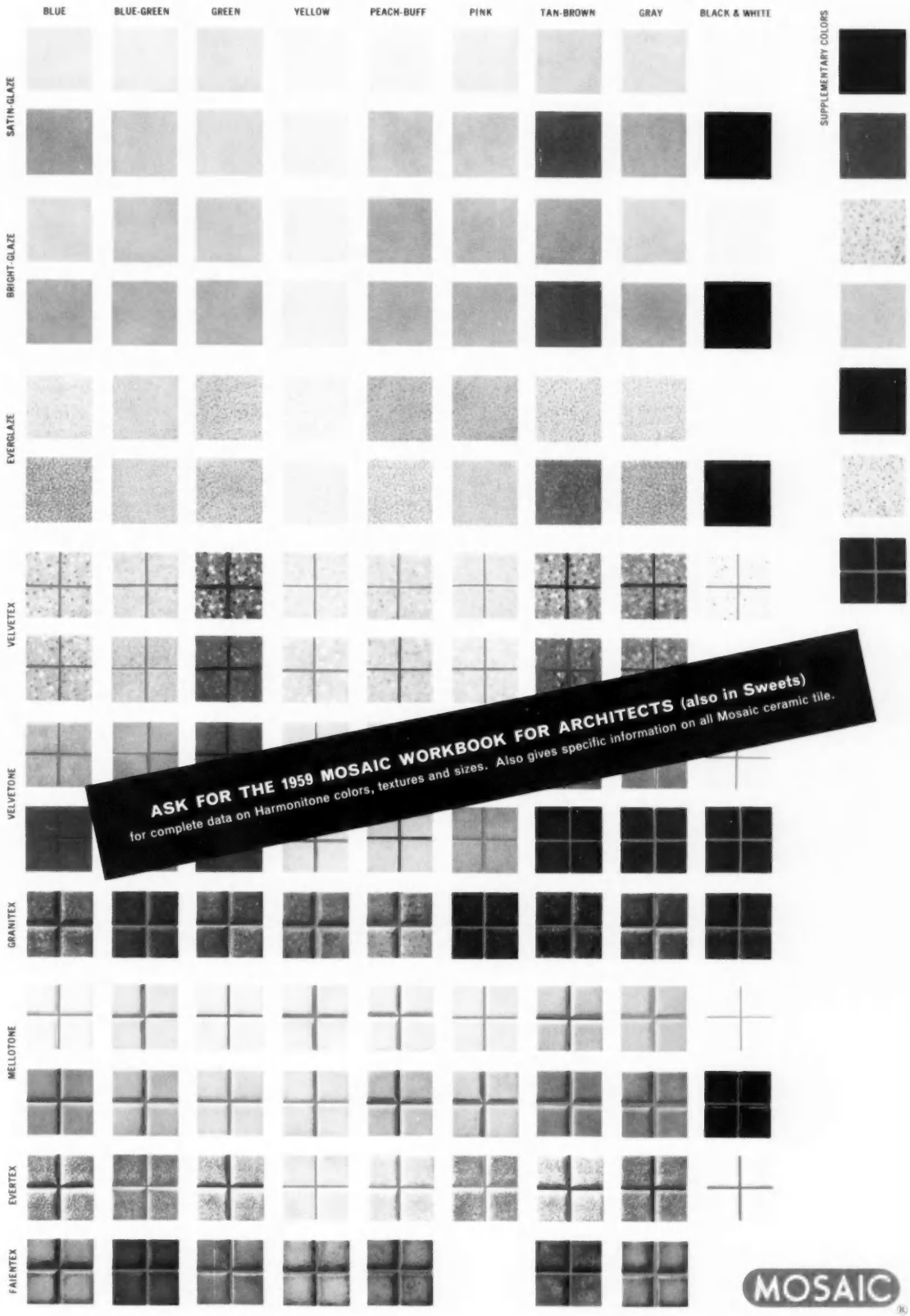
The New Mosaic Harmonitone Palette IN CERAMIC TILE



ASK FOR THE 1959 MOSAIC WORKBOOK FOR ARCHITECTS (also in Sweets)
for complete data on Harmonitone colors, textures and sizes. Also gives specific information on all Mosaic ceramic tile.

MOSAIC®

THE MOSAIC TILE COMPANY THE NEW HARMONITONE PALETTE

A.I.A. FILE NO. 23-A

MOSAIC®

The New Harmonitone Palette

FOR COMPLETE INFORMATION SEE SWEETS CATALOG

This new Mosaic Harmonitone Color Palette is the latest development of The Mosaic Tile Co. It has been called the clearest, most logical and most useful aid to tile selection ever presented to architect, contractor and owner.

Even more important, the new Harmonitone Palette suggests how floors and walls can now be knowingly designed with attractive variations in tile shapes and textures, whether within one "color family" or in combinations of different but compatible colors.

The Mosaic Harmonitone Palette includes nine compatible color groups coordinated to each other. Each represents a color basic to design and construction. Colors within a group are related but deliberately are not matched to each other. Subtle differences in color relate to the differences in texture and finish among the various types of tile.

The variety of hues and tones in each group gives broad selectivity. The character of the colors gives harmony with various other building materials and plumbing fixtures.

There is a planned coordination of colors within a group which enables glazed wall tile to blend with glazed or unglazed mosaics. It also permits the combination of glazed and unglazed mosaics into patterns. In the modular sizes, various shapes, as well as colors, can be combined.

The new color numbering system is an important part of the Harmonitone Palette development. Each number clearly signifies its exact place in the Palette. This is a big help in the preparation of a simple and accurate color specification.

The 1959 Mosaic Ceramic Tile Workbook for Architects, Form No. 236, gives complete data on the new Harmonitone Palette in addition to much interesting information on all Mosaic ceramic tile. The 1959 "Workbook" is in Sweets.

THE MOSAIC TILE COMPANY

America's largest manufacturer of ceramic tile

General offices: Zanesville, Ohio

Member: Tile Council of America, Inc. and The Producers' Council, Inc.

Showrooms and Warehouses: Atlanta, Baltimore, Boston, Brookfield, Wisc., Buffalo, Chicago, Cleveland, Corona, Cal., Dallas, Denver, Detroit, S. El Monte, Cal., El Segundo, Cal., Ft. Lauderdale, Fresno, Greensboro, N.C., E. Hartford, Hempstead, L.I., N.Y., Ironton, O., Jackson, Miss., Kansas City, Little Rock, Los Angeles, Matawan, N.J., Miami, Milford, Conn., Minneapolis, New Orleans, New York (Showroom only), Philadelphia, Portland, Salt Lake City, San Antonio, San Diego, San Francisco, Santa Clara, Seattle, Tampa, Washington, D.C., Zanesville, O.

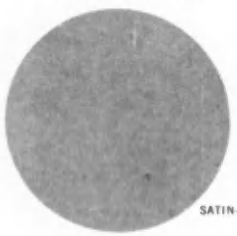
Representatives: Birmingham, Cincinnati, Fair Haven, N.J., Memphis, Oklahoma City, Pittsburgh, Spokane, St. Louis.

Distributors: Albuquerque, Havana, Honolulu, Houston, St. Louis, Hato Rey, P.R.

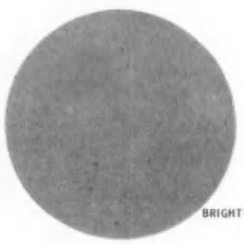
Plants: Zanesville and Ironton, Ohio, Matawan, N.J., Little Rock, Ark., Jackson, Miss., Corona and El Segundo, Calif.

HARMONITONE TEXTURES (shown actual size)

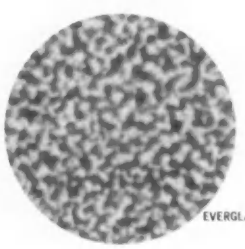
GLAZED WALL TILE



SATIN-GLAZE

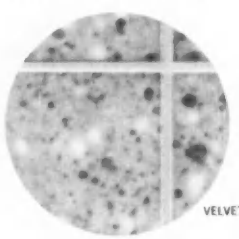


BRIGHT-GLAZE

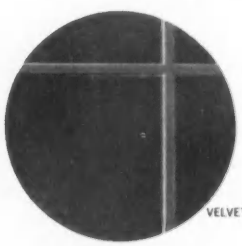


EVERGLAZE

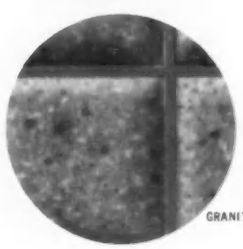
UNGLAZED MOSAICS



VELVETEX

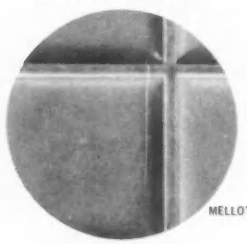


VELVETONE

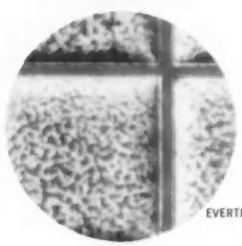


GRANITEX

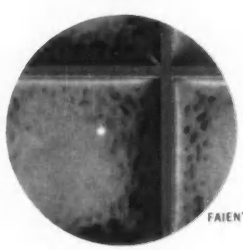
GLAZED MOSAICS



MELLOTONE



EVERTEX

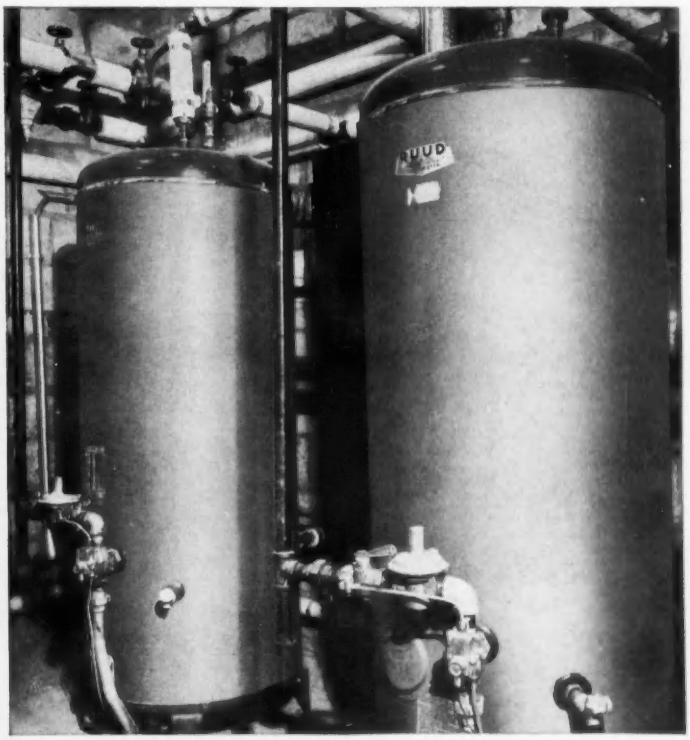


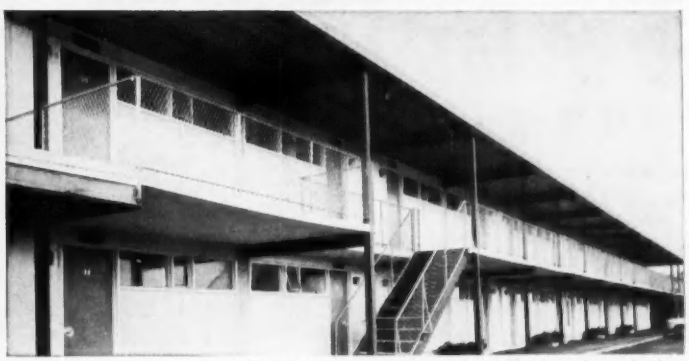
FAIENTEX

THE MOSAIC TILE COMPANY THE NEW HARMONITONE PALETTE A.I.A. FILE NO. 23-A

For free estimates on Mosaic Tile, see the yellow pages for your Tile Contractor, Ceramic

HOWARD JOHNSON MOTOR LODGE REPORTS: "NO COMPLAINTS ABOUT HOT WATER WITH WATER HEATERS OF ALCOA ALUMINUM"





Plumbing Contractor: Conners and Morrison, Summit, N. J.

Two Alcoa alloy gas water heaters help keep Howard Johnson's Springfield, N. J., Motor Lodge 98 per cent occupied all year-round by providing a plentiful supply of hot water in all 36 units.

The two Ruud-Alcoa water heaters have a high recovery capacity of 168 gallons per hour. That means every guest in each unit could take a bath or shower simultaneously and still have an abundance of 160° hot water. The water heaters were installed in September, 1956, when the building was constructed, and operate around the clock, every day of the year, through 106 outlets. There have been no breakdowns or service interruptions.

In applications where a dependable supply of hot water is essential, it pays to specify Alcoa alloy water heaters. The aluminum alloy tank is strong, solid and corrosion resistant for longer life and freedom from water discoloration. High thermal conductivity assures rapid recovery rate and economical operation. Specially designed units meet American Gas Association Laboratories' requirements. For more information on any application—commercial, industrial or residential—send in the coupon, or write Aluminum Company of America, 1899-D Alcoa Building, Pittsburgh 19, Pa.

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Pittsburgh 19, Pa.

Please send me *Water Heater Applications of Alcoa Aluminum*, the 12-page FREE booklet that tells why Alcoa alloy water heaters outperform other water heaters, gives the easy way to figure hot water requirements, lists case histories.

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Comments of regular users of HUCK FASTENERS tell the story.

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"Every fastener is automatically "torqued" identically".

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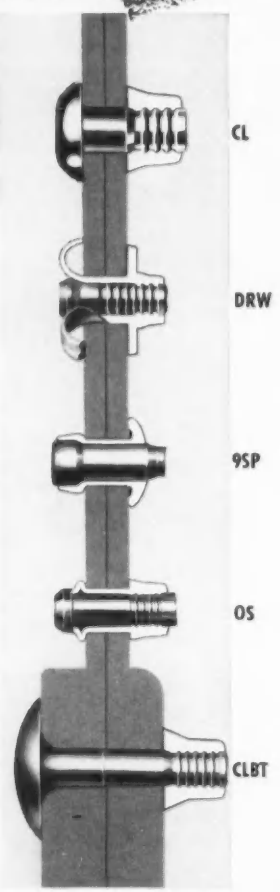
So mechanically predetermined is the result of the HUCK fastening system that unskilled operators can produce professional grade work almost immediately, at up to thirty fasteners per minute. Materials, sizes and head styles to meet your specific requirements.

Give us your fastening problems, our years of experience are at your service.



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Technical Roundup

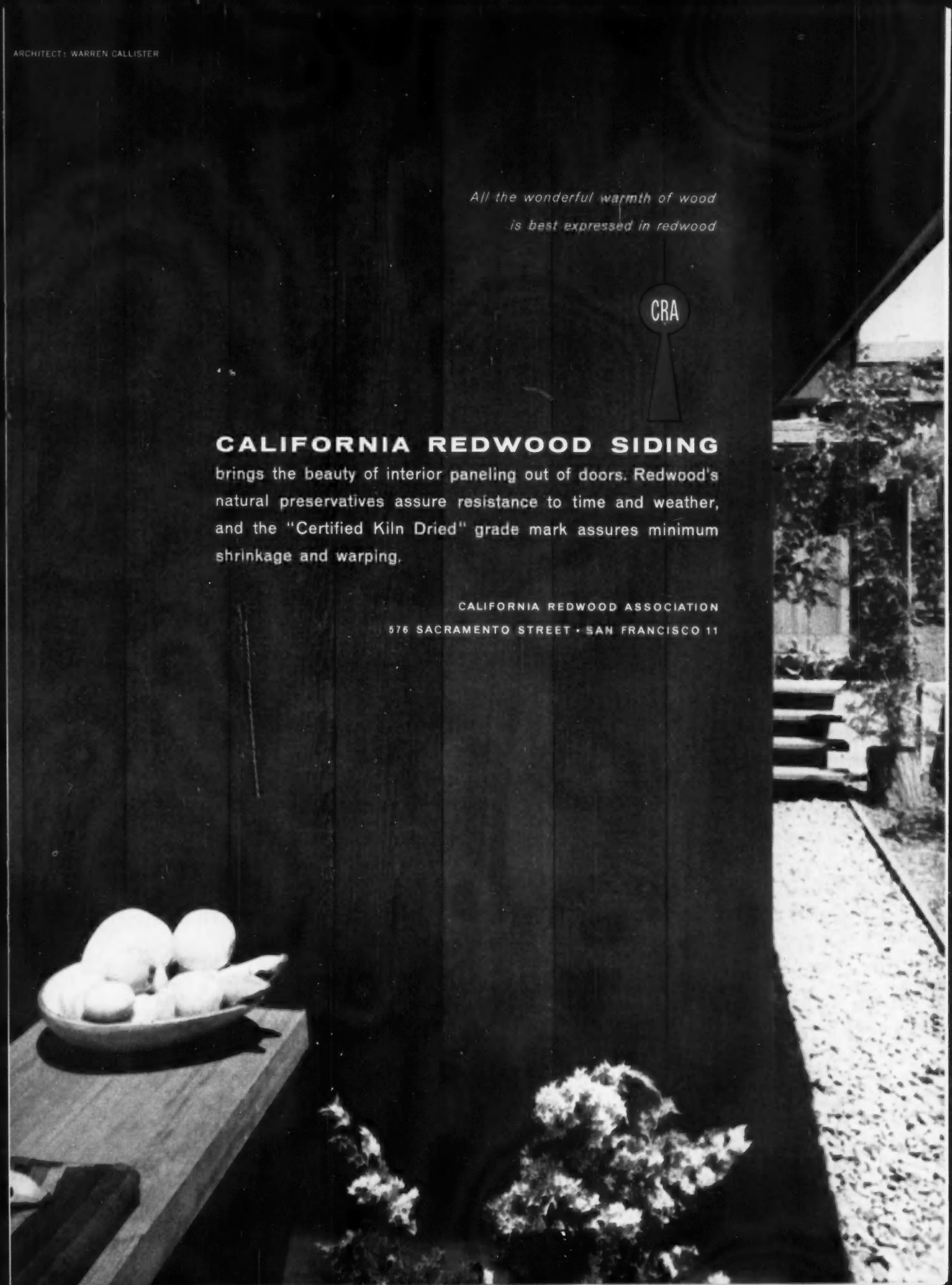
Atomic Power Plant Construction Progressing Ahead of Schedule

The country's largest atomic power plant, now 65 per cent complete, is expected to be in operation in the summer of 1960—six months ahead of schedule. Already the concrete foundation for the reactor "vessel" is in place, power lines have been strung, an office structure is completed and partially staffed, and the seventeen-story-high steel sphere that will house the reactor looms over the surrounding corn fields. When finished the plant, with its "boiling water" type reactor, will produce about 180,000 kilowatts—enough to fill the electrical power needs of a city of a quarter of a million. The first such facility in the U.S. to be built without government subsidy, the plant is being built by General Electric for the Commonwealth Edison Company at a quoted price of $45 million. It is located in Dresden, Ill., about fifty miles southeast of Chicago.

Boxed Channels Frame Lighting Fixtures, Cut School Costs

A new method of using Junior Channels to house lighting fixtures in four Denver area schools has resulted in savings of $25 per fixture or $375 per room, according to the estimate of architect Roland M. Johnson, A.I.A. The boxed 12-in. Junior Channels are on 8-ft centers and run uninterruptedly through the two classroom wings, supporting the poured concrete roof and formed board ceiling. Inside each are set five 4-ft industrial type fluorescent fixtures (a total of fifteen to a classroom), each shielded by a plastic egg crate grid. The exposed channels are painted to blend with the formed board ceiling and classroom trim, and all connections are hidden to give a clean appearance.

more roundup on page 248


ARCHITECT: WARREN CALLISTER
All the wonderful warmth of wood
is best expressed in redwood
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CALIFORNIA REDWOOD SIDING
brings the beauty of interior paneling out of doors. Redwood's natural preservatives assure resistance to time and weather, and the "Certified Kiln Dried" grade mark assures minimum shrinkage and warping.
CALIFORNIA REDWOOD ASSOCIATION
576 SACRAMENTO STREET • SAN FRANCISCO 11

Steeltex Saves $10,000 And 24 Working Days

Architect Cites Double-Duty Package—Form And Reinforcing; Contractor Likes Economy, Versatility Of Pittsburgh Steel Company's Steeltex In Luxurious $1.5 Million Apartment-Hotel

Double-barreled savings—$10,000 on cost of material and 24 working days—came through use of Steeltex in constructing the $1.5 million Presidential Apartment-Hotel in Evanston, Ill.

Steeltex—the wire mesh reinforcing that carries its waterproofed form on its back—provided form and reinforcing for 100,000 square feet of concrete slabs covering seven floors and roof of the luxurious apartment-hotel.

Steeltex from Pittsburgh Steel Products Division of Pittsburgh Steel Company was the logical choice for the job, according to Architect Kenneth R. Woods, AIA, and Frederick A. Thulin Jr., AIA.

Mr. Woods and Mr. Thulin are principals of Thulin, Woods & Isensee, Inc., Chicago architectural firm which designed the building. Structural Engineer Herbert M. Miller was consulting engineer for the project. Said Architect Woods:

"I believe Steeltex is the only product of its type for supporting concrete over joists—in this case a two-inch slab with joists on two-foot centers.

"Steeltex' big advantage is that everything comes in one package—the form provided by the waterproofed paper and the reinforcing provided by the wire mesh which embeds itself into the concrete."

• **Appreciates Economy**—Leonard C. Tharnstrom, president of C. A. Tharnstrom & Co. of Skokie, Ill., general contractor, appreciated Steeltex' economy.

"I estimate we saved about 10 cents per square foot on this job by using Steeltex instead of another material."

Steeltex cuts easily and fits quickly around protruding steel column. Said James R. Huiras, field superintendent for subcontractor: "It took three men only three days to install 12,000 square feet of Steeltex on each floor. Sheet material would have taken twice as much time and required an extra man."

Ready for pouring, Steeltex placed snugly around column is examined by (kneeling) Leonard C. Tharnstrom, president of C. A. Tharnstrom & Co., general contractor; Architect Kenneth R. Woods of Thulin, Woods & Isensee, Inc., and (standing) Pittsburgh Steel Products Salesman William L. Dolan. Mr. Tharnstrom estimated his firm "saved about 10 cents a square foot by using Steeltex instead of other material."

"On top of that," Mr. Tharnstrom added, "Steeltex brought savings with a minimum loss of concrete because the paper reduces the amount of concrete drippage to the floor below."

Another built-in Steeltex advantage —ease of handling and installation— received enthusiastic approval from workmen who installed the Steeltex.

James R. Huiras, field superintendent for sub-contractor Bo-An Steel Erecting Co., Chicago, has used Steeltex many times on various types of construction.

• **Likes Steeltex' Speed**—Speed of installation rates number one on the list of advantages outlined by Mr. Huiras.

"It took three men only three days to install 12,000 square feet of Steeltex on each floor of this building," declared Mr. Huiras. "A sheet material would have taken twice as much time and required an extra man.

"What helped us make such a fast installation was Steeltex' light weight and easy handling. It's easily unrolled, cut to length, tightened and clipped. Men can walk on Steeltex while new sections are laid, too.

"Another good point is that Steeltex fits tightly around columns. It takes only a few minutes to cut Steeltex to fit. After that, you can pour right away."

All the built-in advantages of Steeltex and more—sales engineers to help solve your construction problems—can be put to work for you, too.

How? Just call the nearest Pittsburgh Steel Products district sales office.

See locations at right.

Let Steeltex help provide better construction at substantial savings for you. Call today . . . tomorrow you'll be glad you did.

Continuous reinforcing of Steeltex from section to section with a minimum of side lapping and end lapping cuts costs and speeds installation. Heavy waterproofed paper provides form, prevents drip-through. Wire mesh embedded in concrete gives uniform reinforcing.

▶ **See Sweets Catalog Section 2-B**

Steeltex®

Pittsburgh Steel Products

a division of Pittsburgh Steel Company

Grant Building • Pittsburgh 30, Pa.

DISTRICT SALES OFFICES

Atlanta	Cleveland	Detroit	Los Angeles	Pittsburgh
Chicago	Dayton	Houston	New York	Tulsa
			Philadelphia	Warren, Ohio

Wherever the four winds blow...
this trademark stands for

matchless power exhauster performance

Here's why . . .

Jenn-Air developed the first spun aluminum, low contour exhauster years ago. This was a milestone in exhauster design, but it was by no means Jenn-Air's last word on the subject. Product improvement is a never-ending project at Jenn-Air, and this emphasis on engineering has netted rich dividends over the years. Examples of exclusive features developed by Jenn-Air include:

• **U-spring suspension**—Compensates for both radial and lateral movement to reduce vibration and noise. 44% more effective than rubber isolaters. Unconditionally guaranteed for life!

• **Integral balance**—In addition to dynamic and static balancing of blades, Jenn-Air exhausters feature *integral* balancing of blade with motor. This is an important contribution toward further noise reduction.

• **High point of discharge**—Motor is nested in the housing to provide the highest discharge point of any roof exhauster. By eliminating the need for a high curb base, this feature also makes possible Jenn-Air's attractive "low contour" design.

Every Jenn-Air exhauster that comes off the production line is individually tested for sound level, motor load and insulation breakdown. Only units which can pass these rigid tests are accepted for shipment. Air moving capacities range from 175 to 22,700 cfm and are AMCA-certified. Write for Bulletin 58-B.

JENN-AIR

Jenn-Air Products Co., Inc
1102 Stadium Drive
Indianapolis 7, Indiana

Member of Air Moving and Conditioning Association

ALBRO case history

ALBRO case history

ALBRO case history

an ALBRO CURTAIN WALL "FIRST" for JOHN J. KANE HOSPITAL

Flat anodized aluminum spandrels of large dimension were specified by the architect for the distinctive $22 million John J. Kane Hospital, Allegheny County, Pa. A concealed stiffening system to prevent deformation and "oil-canning" was developed by ALBRO to meet the aesthetic and performance requirements set by the architect for the hospital's curtain wall system.

The flat wall system with 19'-6" wide spandrels, as well as interior railings, special windows and trim, were engineered, fabricated and installed by ALBRO... an example of ALBRO's tradition for accepting total responsibility for every phase of curtain wall and architectural metalwork.

The type of curtain wall erected for this hospital has broad application in institutional, commercial and monumental building construction. For information on the entire family of ALBRO curtain wall, and the story of how ALBRO's thirty years of metal engineering know-how can assist the architect, write for Curtain Wall Catalog 3a, or see it in Sweet's Architectural Catalog File.

John J. Kane Hospital
Allegheny County, Pa.

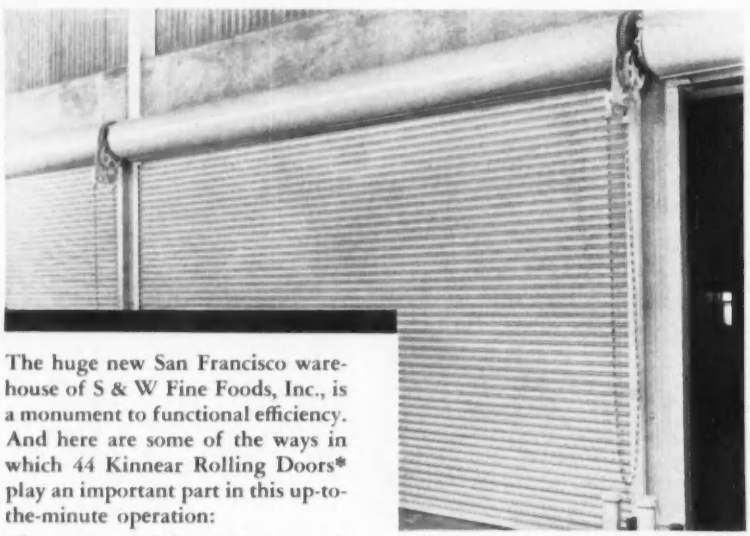
architect:
Button and McLean
Mitchell and Ritchey,
Architects Associated
Pittsburgh, Pa.

general contractor:
Sherry Richards Co.
Chicago, Ill.

AMP ALBRO METAL PRODUCTS CORPORATION
944 Longfellow Avenue, New York 59, N. Y.

44 Kinnear Steel Rolling Doors

Speed Service at S&W Fine Foods —



The huge new San Francisco warehouse of S & W Fine Foods, Inc., is a monument to functional efficiency. And here are some of the ways in which 44 Kinnear Rolling Doors* play an important part in this up-to-the-minute operation:

They open *straight upward* . . . coil smoothly out of the way *above the opening* . . . clear the *entire* doorway quickly — from jamb to jamb and from floor to lintel.

They stay *out of reach* of damage by wind or vehicles.

All floor and wall areas around the doorway are *always* fully usable.

Ceiling space around openings remains clear at *all times*. There's never any interference with cranes, hoists, conveyors, lighting, or other overhead equipment. Goods can be stacked "clear to the rafters" inside or outside the opening.

The tough, flexible, all-steel curtain of interlocking slats assures *long* service, *low* maintenance costs, and *extra* protection against fire, wind, intrusion, and vandalism.

Heavy galvanizing—1.25 ounces of pure zinc per square foot of metal (ASTM Standards) — gives added resistance to weather, wear, and corrosion.

Kinnear Rolling Doors are built any size, for old or new buildings, with motor or manual control. Write for information, or for recommendations on your door needs.

*33 Kinnear Steel Rolling Doors 18'9" wide by 10' high, ten doors 10' wide and 10' high, and one door 6' wide by 7' high.

KINNEAR ROLLING DOORS — Saving Ways in Doorways

The KINNEAR Mfg. Co.

FACTORIES:

1860-80 Fields Ave., Columbus, Ohio

1742 Yosemite Ave., San Francisco 24, Calif.

Offices and Agents in All Principal Cities

Technical Roundup

Steel Framing, Telescoping Forms Give Economy, Hurricane Resistance

"Concern for costs, hurricanes and speed of construction" prompted the use of a weight-saving steel framing system and a new type of concrete form for the University of Miami's new Medical Research Building. According to architects Steward-Skinner Associates, the combination resulted in a cost of only $1.89 per sq ft for the complete flooring system.

The nine-story structural frame used semi-rigid connections to reduce weight. In the lower floors, where columns are large in comparison to beams, conventional semi-rigid beam connections were used; in the top four floors, beams are continuous over columns, with ends cantilevered to equalize positive and negative moments. To give added rigidity to cope with Miami's hurricane problem, 12-in. Junior Beams were framed in at 2-ft intervals, below the top flanges of the girders.

Significant savings in time and materials were gained by pouring the concrete floors on telescoping steel pans instead of on wooden forms. These pans were developed by a group of Miami engineers and are slated for national introduction under the name of "Bobforms." Adjustable to span any distance from 18 to 32 in., they are set on the flanges of the joists, forming a safe, even working surface. The speed with which they can be laid is said to have substantially increased the pace of construction.

Before the 2½-in. concrete slab for the Medical Research Building was poured, wire mesh was spread over the Bobforms and fastened to steel clips welded to the top flanges of the joists.

After the concrete had set, the Bobforms were taken out for use on the upper floors. They were removed as quickly as they were laid merely by telescoping them together and allowing them to drop out of place.

"Telephone planning helped us sell over 2500 homes!"

—says Robert C. Gordon, Ashdon Corporation, San Diego, California

"Planning for the future telephone needs of our home buyers has always made good sense to us," says Bob Gordon. "In fact, we've offered concealed telephone wiring in every one of the more than 2500 homes we've built since 1949.

"It makes sense to prospects, too. They like the idea of telephone wiring neatly concealed inside the walls. And they like having outlets throughout the house, so they can expand their phone service as they need to. No doubt about it—it's a built-in 'extra' that really helps us sell our homes."

Mr. Gordon's corporation is currently building Coronado Estates, a community of 85 beautiful homes in the $24,000 to $45,000 price range located on the Silver Strand peninsula offshore from San Diego. Each home is telephone planned, and this fact is featured prominently in the builder's local advertising.

Your local Telephone Business Office will gladly help you with telephone planning for your homes. For details on home telephone installations, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.

BELL TELEPHONE SYSTEM

This is one of the Coronado Estates homes, being built by Ashdon Corporation in the San Diego area.

TAKE A CLOSE LOOK AT THE SPECS

SPECIFICATIONS

"All treated lumber or timber specified herein shall be impregnated with OSMOSALTS® in a closed cylinder by vacuum-pressure process, full cell method, in strict accordance with the current Federal Specifications and recommended practices of the American Wood Preservers' Association."

"Retention of dry salts shall be .35 pounds per cubic foot of wood for moderate service conditions (exposure to weather but not in constant contact with ground or water) and .55 pounds per cubic foot of wood for severe service conditions (in constant contact with ground or water)."

"Where it is found necessary to frame OSMOSE treated lumber on the job, two coats of a 1-1 mixture of OSMOSALTS and water shall be brushed on the framed surfaces." When specifying treated lumber, refer to Federal Specifications TT-W-569 for composition and the latest revision of TT-W-571d for application.

For further information on treated wood, OSMOSE field representatives are ready to assist you in specifications. Write for our new brochure on the **revolutionary discovery FLAMEPROOFING OSMOSE – PFR.**

We are listed in Sweets.

OSMOSE Pressure Treated Lumber is available at any retail lumber dealer.

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WOOD PRESERVING CO. OF AMERICA, INC.

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Copying our FIBERGLAS* Idea is not enough...

because whisper **QUIET** power roof exhausters like our—

SUPER/AIR-VAN® in FIBERGLAS*

must also have...

- **A research-developed, aerodynamic design that is patented and cannot be copied.**
- **A patented, scroll design to give efficient performance to 4" S.P.**
- **A true Venturi inlet.**
- **Glass smooth air passages.**
- **Custom designed motor isolators.**

Then and only then will you get the whisper quietness of the first power roof exhauster in FIBERGLAS. Capacity 100-12,000 CFM. Static Pressure to 4".

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CERTIFIED RATINGS AMCA

Units with less than 12" wheels do not carry AMCA seals because AMCA test codes do not apply to these small units.

Innovation *not* imitation

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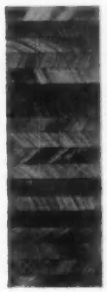
More than 100,000 Gallaher Air-Vans Have Been Installed.

*TM Owens-Corning Fiberglas Corporation

Blackhorse shopping center of Penn Fruit Company, Audubon, New Jersey. Architects: Victor Gruen & Associates, New York City; Contractor: McClain Construction Company, Philadelphia.

As dramatic in appearance as they are economical and permanent in use, glued laminated timber arches by Timber Structures, Inc. are ideal for the commercial building that you want to be "different". . . and better.



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KOHLER ELECTRIC PLANTS

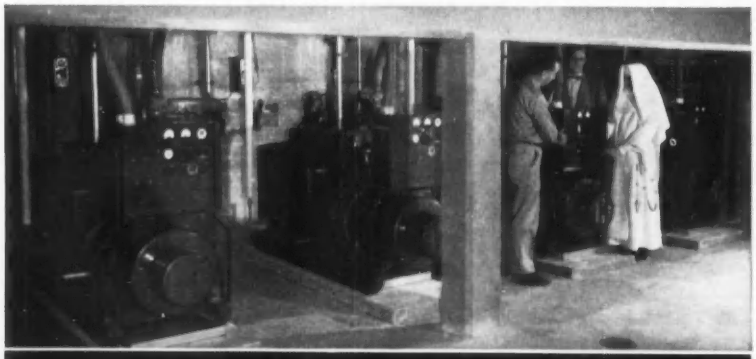
provide protection against power interruptions through 34 years' growth

In 1925, two 1500-watt Kohler Electric Plants were installed in St. Nicholas Hospital, Sheboygan, Wisconsin, as stand-by units to take over critical loads *automatically* when storms or other emergencies cut off regular electricity. Through the years the electric plant installation was expanded as new facilities were added by the hospital.

Today, in a building covering an entire city block, four 50 KW Kohler Electric Plants provide all the electricity needed for uninterrupted patients' care whenever normal power is cut off.

In hospitals everywhere, Kohler Electric Plants insure steady, reliable, unattended power for surgery and delivery rooms, and all other vital hospital facilities. Sizes to 100 KW, gasoline and diesel. Complete manual with suggested specifications sent on request. Write Dept. D-59.

• *Kohler installation with two 50R58, 50 KW, 230 volt, 3 phase AC models; and two 50R68, 50 KW, 115/230 volt, single phase AC models.*



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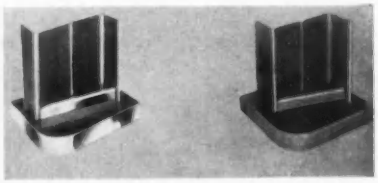
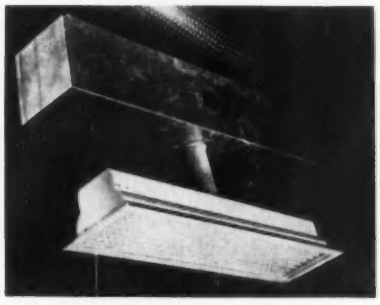
Product Reports

continued from page 227



Matched Moldings for Plastic
A new process for bonding plastic veneers, vinyls, wood and other surfacing products to the aluminum extrusions from which moldings are made makes it possible to match moldings to any wall or counter surfacing material now on the market. The matched moldings not only eliminate chrome trim, but also reduce installation costs by eliminating the scribing and butting of joints. Nailed to the wall, the moldings hold the panels snugly, yet permit them to expand and contract, thus doing away with the problems of buckling, edge curling or joint separation. They can be had in every opening size for joints and edging for any size panels between 1/16 and 13/16 in. in thickness. *Keller Products, 41 Union St., Manchester, N. Y.*



Troffer Air Diffuser Combination
The *Multi-Vent Troffer,* a unique fixture designed to help solve heating, air conditioning and ceiling decor problems in commercial and institutional buildings, combines a drop ceiling, flush fluorescent lighting fixture with a vertically-directed air diffuser. It is said to simplify engineering, reduce initial cost, and make possible cleaner, more attractive interiors. The low velocity diffuser panel is attached above the lighting fixture and connected to the central duct by a flexible tube. The troffer is available with louvered, baffled, open and glass bottoms. If the glass-bottom fixture is used, air is diffused through tiny slots in the perimeter. *The Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.*

continued from page 227

Leaves an anti-skid, non-porous film that's waterproof. Seals in color and beauty, won't discolor even white terrazzo. Highly resistant to scuffs and scratches. Protects against alkali salts and harsh cleaners.

The next time you specify a floor finish or maintenance program, ask your Huntington representative . . . the Man Behind the Drum . . . for his recommendations. He knows what floor finishing materials should be used on different types of floors and exactly how they should be applied for maximum protection and beauty. His help is yours without obligation.

Sweet's

HUNTINGTON LABORATORIES, INC., Huntington, Indiana

- ☐ Please send me details and specifications on Huntington Terrazzo Seal.
- ☐ Send your folder, "Complete Product Specifications for the Treatment of All Floors," which includes complete specifications for terrazzo floors.
- ☐ Have representative call.

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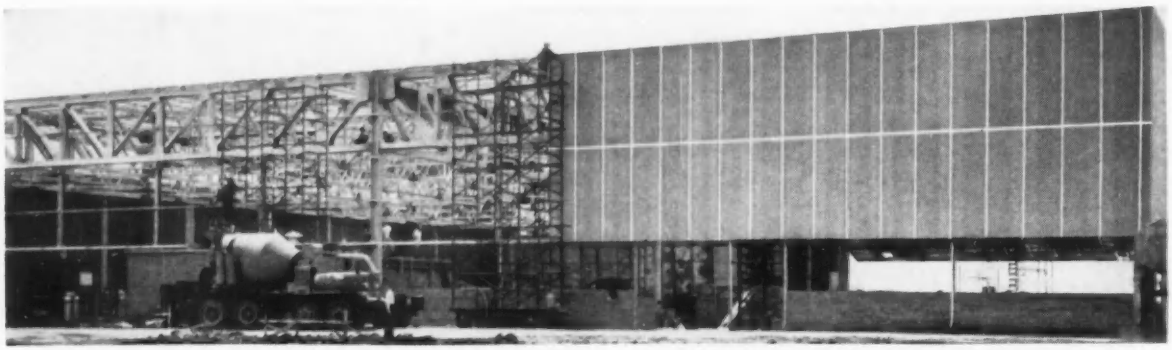
TITLE_____

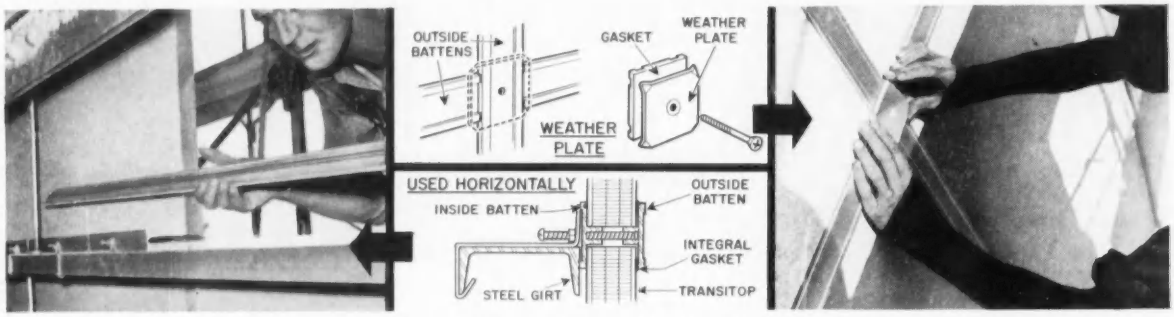
PLEASE TEAR OUT THIS COUPON AND ATTACH IT TO YOUR FIRM LETTERHEAD FOR MORE INFORMATION.

HUNTINGTON . . . where research leads to better products

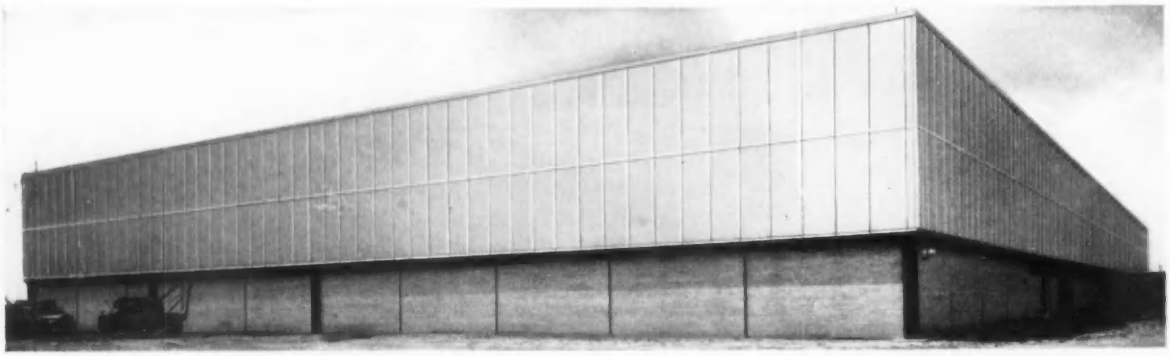
Johns-Manville ASBESTOS TRANSITOP® Panels provide swift, economical, weathertight curtain wall construction



Transitop panels are big . . . 4′ wide x 8′ to 12′ high . . . finish large areas fast . . . structurally strong yet light in weight . . . thicknesses from 11/16″ to 2″. Panels consist of an insulating core with an asbestos facing on both sides.



H & B Aluminum Battens and Accessories provide neat horizontal and vertical joints that . . . simplify wall erection . . . adjust in three dimensions . . . withstand weather, vibration, wind load and thermal change.



Transitop panels are an attractive stone gray in appearance. Pre-primed panels also available for any type of paint finish if color is desired. Using H & B Aluminum Battens, panels can be demounted and reused when constructing building additions.

SEND FOR ILLUSTRATED BROCHURE

See for yourself how J-M Transitop structural panels can be used for economical construction of exterior or interior walls and roof decks. Write Johns-Manville, Box 158, New York 16, N. Y. In Canada, Port Credit, Ont.

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HOW CBM ASSURES YOU BETTER BALLAST VALUE

ETL checks 12 to 14 specified ballast characteristics on all Certified types in production by each manufacturer, verifies compliance by test . . . and does it every month!

THIS is important: Because if any ballast fails to measure up, the right to carry the emblem "Certified CBM by ETL" is withdrawn.

What characteristics are checked? The operating qualities which the American Standards Association has determined will give dependable, rated performance from the lamps with which the ballasts are designed to be used. These constitute the CBM Specification and assure:

High power factor • High light output • Positive starting • Rated lamp life • Limit on heat rise • Control for steady light • Quiet operation

From these qualities come practical benefits: Up to 2,500 hours more lamp life than with ordinary ballasts; as much as 40% more light output; and savings on installation . . . with less wire, fewer circuits needed for fixtures CBM equipped . . . fewer fixtures for the same level of light.

For the latest facts on why it pays to specify fixtures equipped with Certified CBM Ballasts, ask us to send you CBM NEWS.

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CERTIFIED BALLAST MANUFACTURERS

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Participation in CBM is open to any manufacturer who wishes to qualify

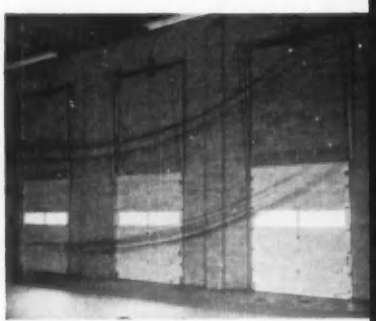
Problem: installing an overhead type door where the ceiling is exceptionally high . . . so lift truck operation is not hindered

THE MARK OF QUALITY

RAYNOR DOORS

Overhead Type

solve your most difficult Installation Problems



RAYNOR Model VL22
Vertical Lift Doors
Solve the Problem

The loading dock and warehouse above was designed to provide maximum storage with instant accessibility.

To prevent obstructing storage space and lift truck operation, Raynor Vertical Lift Doors were specified by the architect. This type of installation takes the doors up and out of the way when open and completely eliminates hanging horizontal track.

Contact your nearest Raynor distributor when confronted with unusual or difficult installations. There is a door in the Raynor complete line of commercial and industrial doors to meet all situations. If custom engineering and special construction is necessary, the Raynor engineering department and modern door manufacturing facilities will help you solve your most difficult problem.

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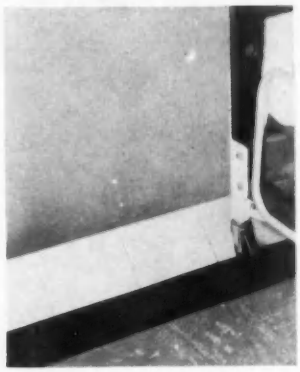
RAYNOR MFG. CO.

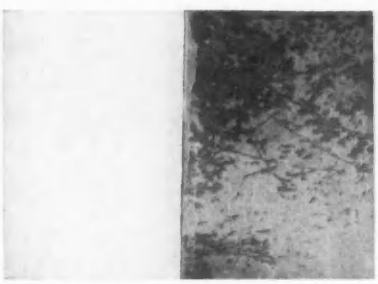
DIXON, ILLINOIS

Builders of a Complete Line of Wood Sectional Overhead Doors

Product Reports



Splayed Tile Base Shapes
Wheeled equipment is prevented from marring wall surfaces by splayed base shapes newly added to the "6T" *Vitritile* facing tile series. The new shapes feature a 3-in. inclined projection outward from the base of the wall. All six available units measure $5\frac{13}{16}$ in. in height, and come in black, dark green and brown trim shades or the manufacturer's standard tile colors. They can be used with any wall surface, including plaster. *Natco Corp., 327 Fifth Ave., Pittsburgh 22, Pa.*



Wear-Resistant Floor Enamel
A new non-toxic isocyanate floor enamel for concrete surfaces is said to offer maximum toughness, flexibility, and abrasion and impact resistance. In a one-year performance test, the enamel was applied to a portion of a school cafeteria where it was trampled by seven hundred children each day. The photo above shows the deterioration of a conventional floor finish (left) versus the unmarred surface of the *Durethane* enamel next to it. The enamel has two components—a clear liquid and a tile red, pewter gray or cruiser gray color component—which are combined in equal parts just before applying the finish with brush, spray or roller. Two coats are recommended. *Pittsburgh Plate Glass Co., 632 Ft. Duquesne Blvd., Pittsburgh 22, Pa.*

more products on page 264

Announcing

PENMETAL MOVABLE INTERIOR PARTITIONS

Now . . . complete flexibility in the use of interior space is yours through the incomparable versatility of this movable-partition system. Simple, adaptable, modular steel framing, to which can be attached various types of flush paneling, permits boundless latitude in design.

Your interiors can be handsome and still be thrifty. They can have permanent-wall stability, but still be relocated at will, without damage to any of the parts. They will never go out of style. Is there any better guarantee of long-range economy?

Penmetal Movable Partitions present a perfectly flush appearance with only hairline joints between panels. There are no visible posts. Steel panels come in a choice of beautiful baked-enamel colors. Hardwood, plywood and gypsum-wallboard panels are also easily applied with the Penmetal system.

Send for *new* 24-page descriptive brochure. Ask for a copy of catalog MP-1.

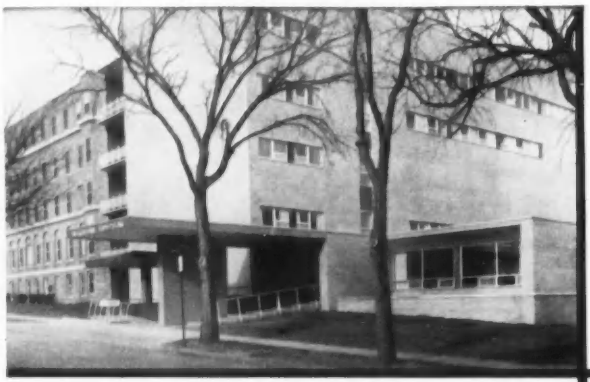
PENN METAL COMPANY, INC.

Sales Office for Movable Partitions: Parkersburg, W. Va.,
AXminster 5-4521

General Sales Office: 40 Central St., Boston 9, Mass., LAfayette 3-6344

Plant: Parkersburg, W. Va.

PM 207

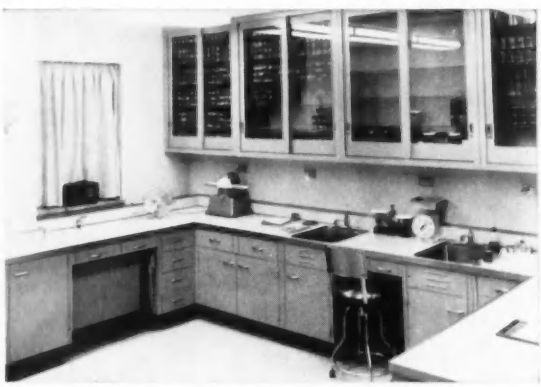


Hospital Casework by *St. Charles*

At McKennan Hospital, Sioux Falls, S. D.

Arch.: Harold Spitznagel & Assoc.

Hematology



Tissue Laboratory

Oral Surgery

General Laboratory

Functional beauty was the guiding concept in the construction of this new addition to McKennan Hospital, Sioux Falls, where skilled use of color interiors complement the clean architecture of the building. This concept was carried through even to the selection of St. Charles Steel Casework in color.

St. Charles' quality, dependability and ability to meet special requirements are fast making Casework by St. Charles synonymous with the best in hospital equipment. Perhaps our skilled personnel and modern construction facilities can serve you too. Inquires will receive prompt attention.

A request on your letterhead will bring our 40-page catalog, "St. Charles Hospital Casework."

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casework • sinks and counters • special purpose units

ST. CHARLES MANUFACTURING COMPANY, DEPT. ARH-4, ST. CHARLES, ILLINOIS

Add new elegance with this translucent vinyl tile

Classic beauty and modern convenience are both assured when you design with new B.F. Goodrich "Corinthian" All Vinyl tile. "Corinthian" looks and lasts like fine marble. The clear-through non-directional veining simply can't wear away.

Your choice of "Corinthian" will reflect an atmosphere of elegance and luxury. Its light weight makes it ideal where reduction in floor load is an important factor.

Stains, oils, greases and detergents can't harm it (it will outlast the building), and damp mopping retains its brilliance. Though it looks like marble, "Corinthian" tile is amazingly resilient and quiet underfoot.

Use on or above grade. Nine classic colors, 1/8" thickness, in tiles 9" x 9", 12" x 12", and 36" x 36". For more complete details, see Sweet's or write the B. F. Goodrich Company, Flooring Products, Watertown 72, Mass., Dept. AR-4

"CORINTHIAN" Koroseal® VINYL FLOOR TILE

B.F.Goodrich *flooring products*

Cool cushions ease skating rink pipe into place!

General Contractor: Webb & Knapp Construction Corp., Denver, Colorado

An unusual feature in the construction of the Zeckendorf Plaza Skating Rink in the Court House Square Development, Denver, Colorado, was the method used to lower the header after the pipe had been welded to it. To protect the pipe from damage, 300-pound blocks of ice were placed under the header so that it settled gently into the header trench as the ice melted.

For this project, National Tube supplied 28,000 feet of 1" extra-strong USS National Pipe, as well as the 8" Seamless Pipe used for headers which were spaced 63' 10" apart. The rink covers 7,071 square feet—an area that required 442 runs.

If you need top-quality steel pipe for ice skating rinks, snow-melting and radiant-heating installations, or for all types of building and industrial applications, be sure you specify USS National Pipe. *Why?* Because National Pipe gives you the best possible investment by giving you the best possible service per dollar of cost. If you'd like further information or immediate assistance with your pipe problems, write to National Tube Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania. *USS and National are registered trademarks*

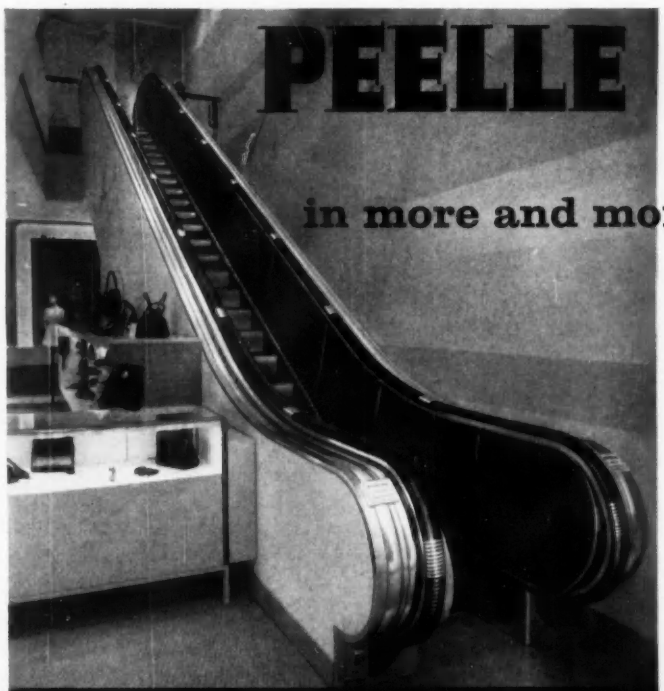
"The world's largest and most experienced manufacturer of tubular products"

National Tube Division of United States Steel

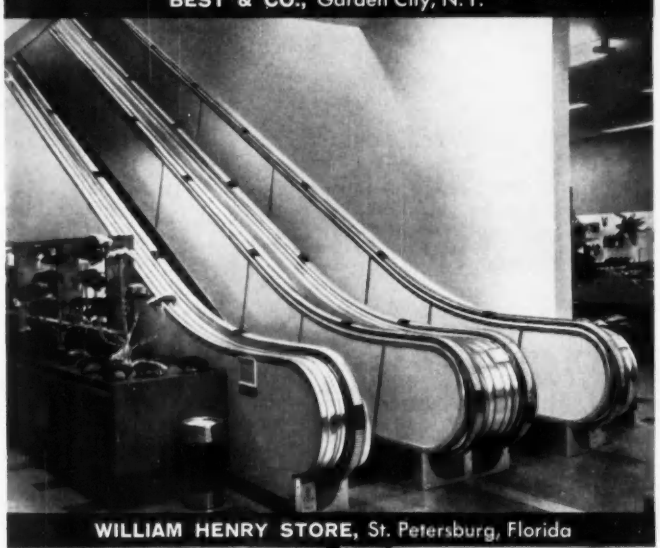
Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
United States Steel Export Company, New York

PEELLE MOTORSTAIRS

move people to buy in more and more well-planned stores

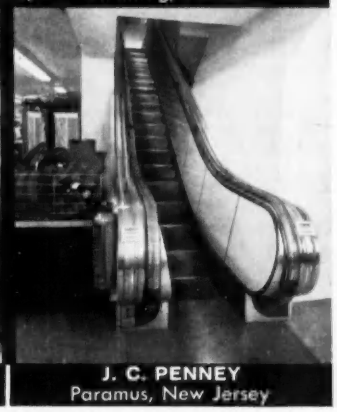


BEST & CO., Garden City, N.Y.



WILLIAM HENRY STORE, St. Petersburg, Florida

MONTGOMERY WARD & CO.
Oakland, California



J. C. PENNEY
Paramus, New Jersey

Peelle Motorstairs present an attractive way to increase sales on upper floors. Their crisp lines, graceful proportions and harmonious colors add to the beauty and *décor* of well-planned interiors. Peelle Motorstairs are readily recognized by the exclusive Peelle Handrail with contrasting color spacers.

The engineering behind the Peelle Motorstair reflects a completely unbiased viewpoint, unaffected by earlier traditions. The result is a product that has been developed to meet today's increased traffic loads and wider variety of operating conditions with long trouble-free service and minimum maintenance assured.

That this type of approach was successful is evidenced by the wide acceptance which the Peelle Motorstair enjoys among architects, engineers and owners. Over two-thirds of the present Peelle Motorstair installations are repeat orders.

PEELLE PLANNING SERVICE

Without cost, Peelle engineers will help you work out a plan for the advantageous use of Motorstairs in either new or existing buildings. Call or write fully about your requirements.

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY

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Efficient dependable elevator service is of vital importance in this new 15 million dollar Health Center.

Again, as in many of the nation's leading hospitals, Montgomery has been selected to supply elevator equipment that not only will be modern in design and operation — but will more than satisfy the demands expected for efficient dependable vertical transportation.

Montgomery "Measured-Demand" Triplex and Selective-Collective elevator systems with or without attendant in the Medical Science and Teaching Hospital Units of this Health Center were sold and installed by the Bryce Elevator Company of Jacksonville, Florida, a division of Montgomery Elevator Co. of Moline, Ill.

J. HILLIS MILLER HEALTH CENTER GAINESVILLE, FLORIDA

THE OFFICE OF GUY C. FULTON, ARCHITECT BOARD OF CONTROLS STATE OF FLORIDA AND ELLERBE & COMPANY, ARCHTS. ST. PAUL, MINN.

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ELEVATOR COMPANY, MOLINE, ILL.

Exclusive Manufacturers of Passenger and Freight Elevators Since 1892

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ZIP-A-TONE! 'cause it's the first made . . . and still best for fast, sharp—economical reproductions! Over 800 line, tone and pattern variations in 35 solid colors, matte or gloss finish.

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BLU-ZIP! 'cause it's heat resistant up to 300 degrees! Again and again —sharp, clear reproductions from the same art. Available in some unlimited selection as Zip-A-Tone!

THAT'S why it's better! PARA-TONE PRODUCTS . . . FIRST CHOICE WITH PROFESSIONALS EVERYWHERE!

PARA-TONE INCORPORATED

512 West Burlington • La Grange, Illinois

The dramatic facade of this new Cleveland office-warehouse of E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation, consists of 4' x 8' panels of translucent ivory PLEXIGLAS. Fluorescent tubes behind the panels provide complete luminosity at night. Letters and trademark reproductions are also PLEXIGLAS. Architects: Toombs-Amisano & Wells, Atlanta, Ga. Builder: Gillmore-Olsen Co., Cleveland.

Beautify and Identify with **Plexiglas**

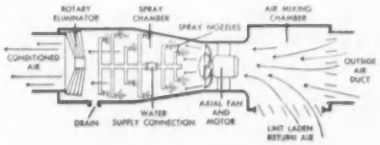
The luminous facade shown above is just one of the many ways PLEXIGLAS® acrylic plastic is being used in building applications. Others are dome skylights, lighting diffusers and lenses, signs, daylight-control panels, spandrels, partitions, and decorative glazing. The reason for this variety of uses? PLEXIGLAS combines light transmission with wide color range, outdoor stability, light weight, resistance to breakage, and ability to be formed to almost any shape. Write for the names of building products made of PLEXIGLAS, and for technical information and assistance on your specific projects.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

In Canada: *Rohm & Haas Co. of Canada, Ltd., West Hill*
Crystal Glass & Plastics, Ltd., Toronto



Industrial Air Conditioner
The *Rotaspray Weathermaker*, a new central air conditioning device for textile and other industrial plants, takes only one-third the space of present equipment, provides more accurate control of humidity, and virtually eliminates system cleaning and maintenance. In operation, air drawn into the *Rotaspray's* cubical mixing chamber is sent through a "hurricane" of atomized water particles to a rotary eliminator wheel which removes water droplets, lint and other foreign matter before air leaves the chamber to enter the duct system for distribution. The water and entrained particles then drain from the self-flushing cylinder to a single separation tank serving all units. After the waste material has been separated from the water, the water is recirculated to the air conditioner. The compact *Rotaspray* may be suspended from the ceiling, hung from a wall or located on the roof. It does not require a shelter. *Carrier Corp., Syracuse, N. Y.*

Concentrate Responsibility...

Specify SEDGWICK **Dumb Waiters** and SEDGWICK **Dumb Waiter Doors**

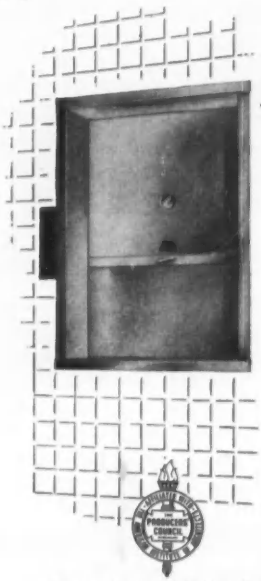
When you select a Sedgwick Dumb Waiter, you get a *completely* integrated installation – including dumb waiter doors – designed, engineered, manufactured and installed by Sedgwick.

This places the responsibility for the entire installation in the hands of *one* supplier – cutting in half the red tape, contracts and approvals, and eliminating your coordination of door and dumb waiter design and erection. Furthermore, all equipment is shipped at the same time, saving shipping and handling costs. The same mechanics install both doors and dumb waiters.

Sedgwick Dumb Waiters and Doors are available in a complete range of modern, improved types and standard sizes that can be adapted to fit requirements exactly.

(See standard specifications and layouts in SWEETS 33a/Se)

Doors are manufactured in bi-parting, slide-up, slide-down or hinged arrangement. Also access and clean-out doors. (Underwriters' Labelled where required.) *Send today for complete literature and specifications.*



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★ RESIDENCE ELEVATORS
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NATIONWIDE SERVICE

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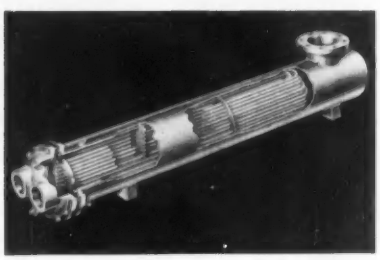
Air Conditioning Control Console
The *Selectografic Supervisory Datacenter*, a miniaturized heating and air conditioning control console, is designed to enable a building engineer to remain seated while he monitors and adjusts building temperatures. The compact console (4 ft high and wide by 2 ft deep) includes an 11 by 16 in. projection screen for slides containing system diagrams, floor plans or other building or maintenance data; up to 35 pushbutton switches depending on the number of systems to be controlled; a clock, a temperature indicator and an intercommunications unit. *Minneapolis-Honeywell Regulator Co., Commercial Div., 2747 Fourth Ave., Minneapolis 8, Minn.*

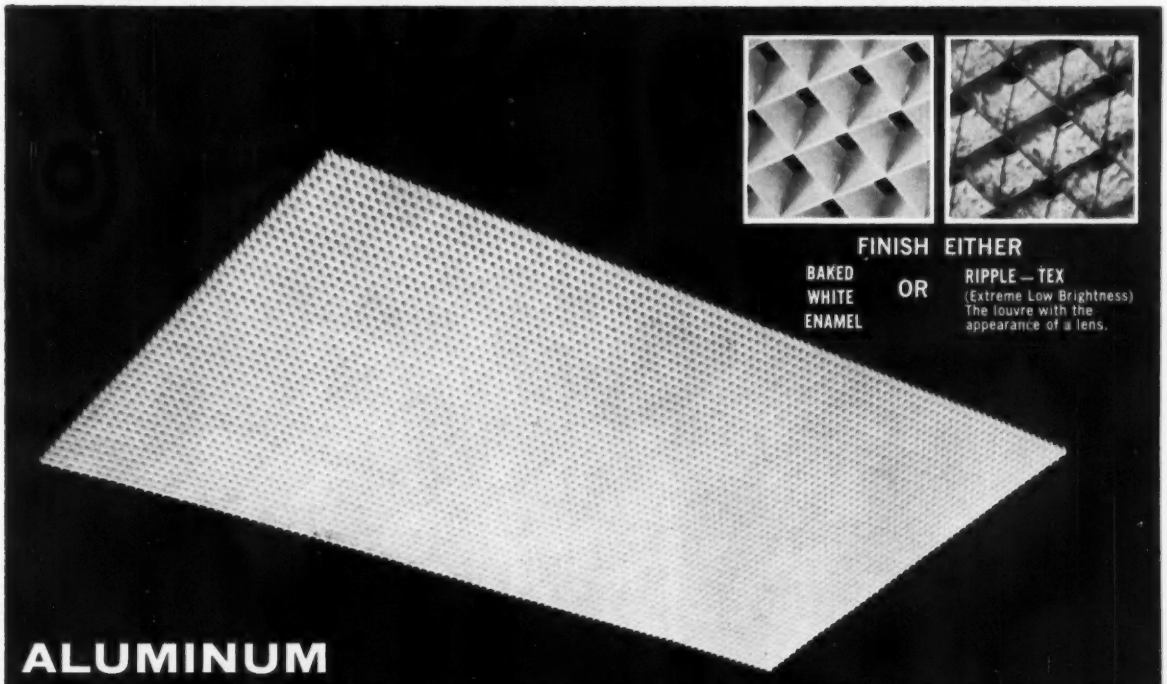


Improved Instantaneous Heater
An extra-large steam entrance area beyond the tube bundle of a new line of Ross instantaneous heaters is said to prevent tube damage by impingement, thus prolonging tube life. Designated Type W-100, the units are of compact, simplified design, with removable, pull-through tube bundles. Standard construction consists of rugged steel shells, cast iron bonnets, and seamless, copper alloy U-tubes. Available in 128 sizes, the heaters can be used for practically every water heating requirement. *American-Standard, Industrial Div., Detroit 32, Mich.*

more products on page 268

NEW from NEO-RAY

LEADER IN LOUVRED CEILINGS



ALUMINUM SC MINI-CELL® LOUVRED CEILINGS

• with ½" x ½" x ½" cells • exclusive CEL-LOK® PROCESS

A NEW CONCEPT IN LOUVRED CEILINGS

Now available—Aluminum Louvres with ½" x ½" x ½" cells. Neo-Ray MINI-CELL louvres now make possible overall luminous ceilings in 2' x 4' or 3' x 3' modular grid systems (or to specification) with the following advantages:

- New CEL-LOK PROCESS for locking louvre blades at each intersection . . . guaranteed prefabricated alignment, dimensional stability.
- Visual comfort . . . high efficiency with Neo-Ray MINI-CELL louvres in Baked White Enamel . . . or Ripple-Tex for very low brightness.
- Easy-to-install inverted Tee-bar grid systems . . . louvres simply lay into position.
- Ideal for ceilings, skylites, air diffusers . . . many, many applications.
- Special sizes to 48" x 48" and larger.
- Available Neo-Matte Alumilite or other finishes on request.

IN THE SOUTH:
See Our Permanent Display At
ARCHITECTS & ENGINEERS INSTITUTE
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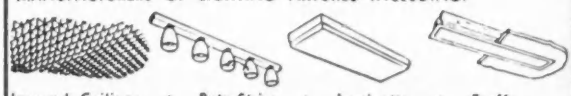
SPECIAL LOUVRE DESIGNS?
Neo-Ray is recognized as the pioneer in the development and manufacture of louvred ceilings . . . with years of louvred ceiling experience. Let the "know-how" of our engineering department assist you. No obligation, of course.

See our catalog in Sweet's Architectural File sec. 32a NE

Send for the following literature:
. . . New Product Bulletin N-58 (Mini-Cell)
. . . Sweet's Architectural File for 1959
. . . Louvred Ceiling Catalog No. 544

MANUFACTURERS OF LIGHTING FIXTURES INCLUDING:



Louvred Ceilings • Roto-Strip • Luminette • Troffers

NEO-RAY PRODUCTS, Inc.
315 East 22nd St. • New York 10, N. Y.

Climate by Chrysler

. . . more than just coolness, costs less than you'd expect!

When you select Chrysler Air Conditioning, you have the largest choice of units in the industry. And every unit includes—as standard equipment—important features that would cost up to $364 to add to conventional air conditioning.

The Chrysler line of packaged air conditioning contains almost 300 combinations of water-cooled and waterless equipment . . . in capacities from 3 to 45 tons. You'll get exactly the right model and capacity for your job—never under or over-sized.

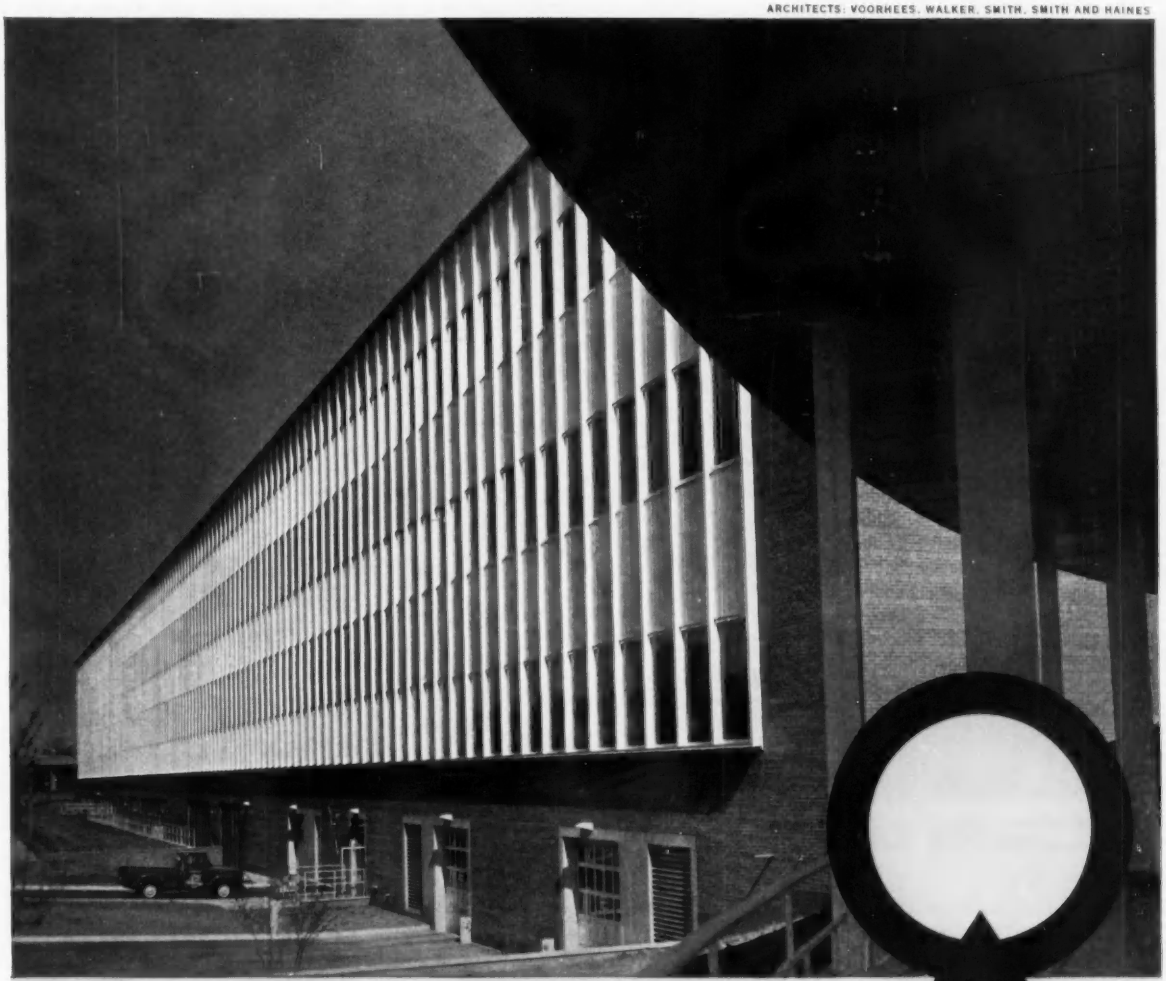
And every unit will be complete with features found as standard equipment on no other air conditioning. Mild weather control, oil purifier, electronic safety controls, quick-response expansion valves. And you can specify optional accessories like Chrysler's exclusive electrostatic air purification system and all-weather operation control.

Climate by Chrysler means more than just coolness. Your clients will enjoy low-cost year-around comfort that only true air conditioning can provide. That's the reason more businesses do more business with Chrysler Airtemp—the company that pioneered packaged air conditioning. Get all the facts. Write: Airtemp Division, Chrysler Corp., Dept. M-49, Dayton 1, Ohio.

CHRYSLER AIRTEMP

FIRST WITH THE FINEST IN AIR CONDITIONING

ARCHITECTS: VOORHEES, WALKER, SMITH, SMITH AND HAINES



OLIN ALUMINUM HELPS FORD CUT BUILDING AND MAINTENANCE COST

At Ford Motor Company's Engineering and Research Center in Dearborn, the clean sweeping facade is achieved with curtain walls fabricated from Olin Aluminum. Ford cuts upkeep cost year after year because aluminum needs no painting, minimizes maintenance. And, aluminum saves construction time and money . . . esthetically blends with any modern design. Our trained consultants welcome the chance to help you use aluminum most advantageously. Metals Division—Olin Mathieson Chemical Corporation, 400 Park Avenue, New York 22, N.Y.

OLIN ALUMINUM

Symbol of New Standards of Quality and Service in the Aluminum Industry

IS A REGISTERED TRADEMARK

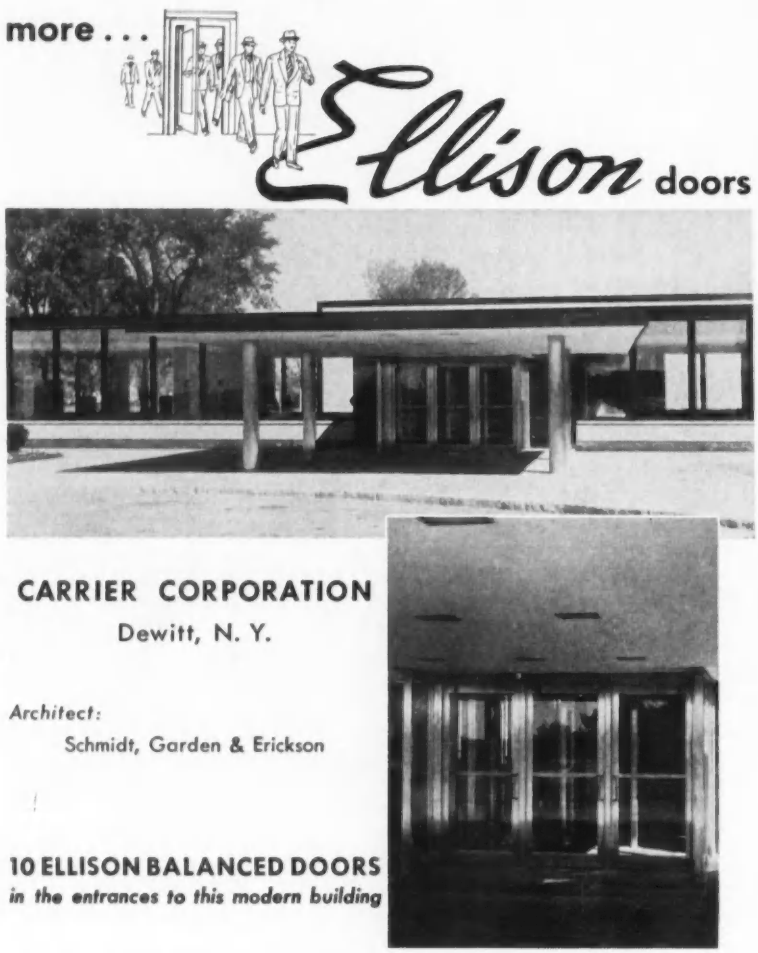
Adhesive for Foamed Polystyrene
A new non-flammable mastic adhesive bonds rigid and semi-rigid expanded polystyrene foams to themselves and to other materials such as wood, concrete, metals, etc. Since the new formulation, trade-named *Bondmaster G459*, is water-dispersed, all danger of solvent attack on susceptible polystyrene foam cells is eliminated. Bonds made with the new adhesive are said to resist humidity and freezing temperatures, and to maintain strength throughout a temperature range of from −35 degrees to +250 degrees F. The water-based adhesive may also be used for bonding insulating and sound-deadening materials, and other porous or fibrous substances. *Rubber & Asbestos Corp., Dept. P, Bloomfield, N. J.*

Improved Fluorescent Lamp Ballast
Formerly supplied in twin containers as a ballast and auxiliary, an improved ballast for two 96- or 72-in. *SHO, VHO* or *Powergroove* lamps now comes in a single container. The new construction is 40 per cent smaller and 40 per cent lighter, and is said to have a perfect sine wave shape with a 1.4 crest factor that assures 100 per cent light output plus full rated lamp life. The lower watt loss gives the user a bonus equivalent to an increase in overall efficiency of 8 lumens per watt. *Advance Transformer Co., 2950 North Western Ave., Chicago 18, Ill.*

Fire Retardant Paint
An interior flat enamel that is said to compare in appearance with fine architectural finishes has been given a fire retardant rating in Underwriters' tests. Available in seven colors and white, the new fire retardant paint is expected to be particularly useful in stair wells and furnace rooms of homes, as well as in plants, offices, ships, hospitals, schools, hotels and apartment houses. It can be applied by brush, roller or spray gun, and is most effective when used on new or unpainted surfaces. Three coats are recommended for optimum results. *E. I. du Pont de Nemours & Co., Wilmington, Del.*

Ceiling-Mounted Hospital Light
The *Astrilite*, a new ceiling-mounted patient room light, is said to combine improved illumination with substantial economies for hospitals. According to the designers, the three-compartment fluorescent unit provides four levels of illumination. Soft, general room light or high-level light for reading and close work are provided from the head-end compartment; full bed-length light is available for examination or surgical preparation; and a safety night light at the foot-end of the fixture adds to nursing convenience and patient comfort. Savings are attributed to decreased maintenance time, the smaller current consumption of fluorescent tubes, and a simplified wiring system. *American Sterilizer Co., Erie 6, Pa.*

more products on page 272


more . . .
Ellison doors
CARRIER CORPORATION
Dewitt, N. Y.
Architect:
Schmidt, Garden & Erickson
10 ELLISON BALANCED DOORS
in the entrances to this modern building
The door that lets TRAFFIC through QUICKLY
Ellison
ELLISON BRONZE CO., INC.
Jamestown, New York
representatives in 72 principal cities in U.S., Canada and Puerto Rico
the BALANCED DOOR

Building designed and Textolite specified by Architect Neil S. Greydanus, S. E. Greydanus & Son, Prospect Park, N. J.

Used in lobby of new county service building

Walnut-pattern General Electric Textolite® shapes image of efficiency-with-a-heart

TEXTOLITE WOOD-PATTERN CREATES WARM FIRST IMPRESSION . . . CUTS MAINTENANCE COSTS TO THE BONE!

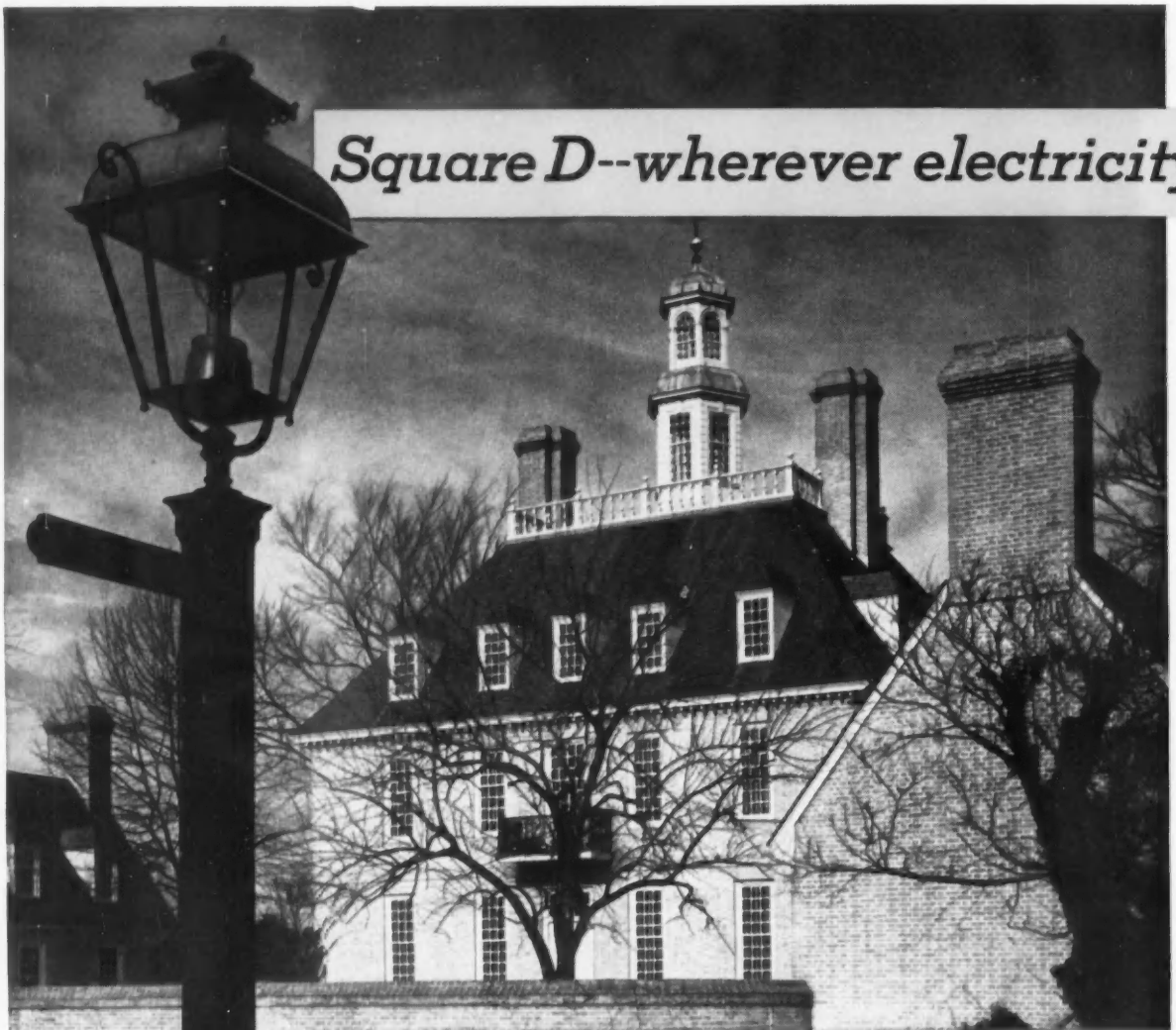
1500 square feet of Textolite Frosted Walnut cover the lobby walls of the modern Passaic County Service Building in New Jersey. These Textolite surfaced walls, by combining the maintenance efficiency of a plastic laminate with the warming effect of real wood, help shape an image of efficient but friendly service in the minds of those entering the building.

On walls, doors, tables, desks, counters—wherever you want durability *plus* beauty—General Electric Textolite will add warmth through pattern and color and subtract costly hours of maintenance time.

For Textolite, unlike wood, doesn't need waxing or periodic refinishing; it *stays* as good as new with just a sweep of the sponge.

See all of the 67 Textolite colors and patterns in the 1959 Sweet's Architectural File, Catalog 14a/Ge. Or write to the Laminated Products Department, General Electric Company, Box 495, Marion, Ohio, for a free color folder showing the 67 patterns and colors. And for answers to any questions you might have, call your nearby Textolite distributor. He's listed in the Yellow Pages under "Plastics".

Textolite®
LAMINATED SURFACING
GENERAL ELECTRIC



Square D--wherever electricity

NOW IT'S AN EVEN GREATER EXPERIENCE TO VISIT

COLONIAL *Williamsburg*

MORE THAN eight million people have visited this enchanting Virginia spot where the course of early American history was charted. Now, through the facilities of Colonial Williamsburg's new Information Center (*opposite page*), guests are provided with every conceivable convenience and comfort to further enhance their stay. • Among the Square D equipment used throughout these new buildings — safety switches, motor starters, limit switches, relays, pushbuttons, control centers, switchboards, panelboards, duct and unit sub-stations.

SQUARE D COMPANY

Architectural work executed by the Division of Architecture, Construction and Maintenance of Colonial Williamsburg, Inc., under direction of A. Edwin Kendrew, F.A.I.A.
Consulting Architect • Harrison and Ambrovitz, New York City
Mechanical and Electrical Design Engineers • Wiley and Wilson, Richmond, Virginia
Electrical Contractor • Chewning and Wilmer, Inc., Richmond, Virginia

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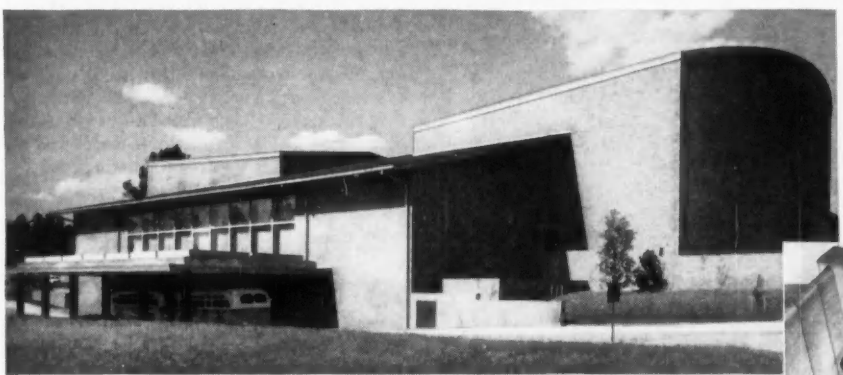
SQUARE D ELECTRICAL EQUIPMENT THROUGHOUT THIS BEAUTIFUL, FUNCTIONAL INFORMATION CENTER!



For perfect viewing, theatre seat rows are four feet wide and rise on sharp one-foot elevations. Three-foot barriers between rows provide full visibility, unbroken by persons in front.

Information Center, through exhibits, maps, and personal direction, "conditions" visitors for their tour of Colonial Williamsburg. Twin theatres with world's largest indoor screens, offer continuous showings of "Williamsburg...The Story of a Patriot." Free bus service between the Center and the restored area. Parking for 1000 cars. *Square D equipment in this area ranges from pushbuttons and relays to panelboards, bus duct and matched switchboard-control center.*

Motor House, located on 12-acre wooded plot, provides 200 air-conditioned rooms. Lounge, recreation rooms and three swimming pools for guests' enjoyment. *Square D loadcenters, panelboards and unit substation serve this motor house area.*

Cafeteria Building, adjacent to Motor House and Information Center, serves 600 guests per hour. Spacious lounge. Gift shop. Air-conditioned. *Square D equipment distributes and controls electricity for kitchen equipment, refrigeration, air-conditioning, and lighting.*

One of Square D's matched switchboard-control center installations. This one, in the cafeteria basement, feeds the entire building, serving lighting, air-conditioning, heating and boiler equipment.

Field Engineering Service is available to architects and consulting engineers through more than 100 Square D offices, backed by over 1000 authorized electrical distributors and 19 plants in the United States, Canada, Mexico and Great Britain

Executive Offices • 6060 Rivard Street, Detroit 11, Michigan

Architect: Arthur B. Henning, Anderson, Ind.

symbols of faith . . .

crafted in metal by Overly

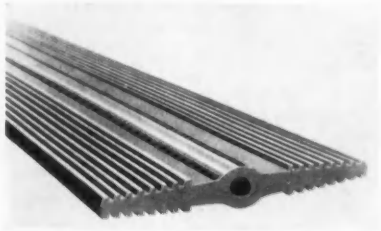
This handsome, 21-foot cross and belfry was crafted by Overly in ⅛" aluminum for East Lynn Christian Church, Anderson, Ind. ● Though you know us best as spire builders, Overly is also a specialist in the crafting of crosses for towers, interior and exterior walls and altars. Our long experience and unique cost-saving prefab techniques enable us to authentically and economically reproduce the cross in any of the 400 known heraldic, liturgical or architectural forms. ● Write for quotations on your cross requirements in aluminum, stainless, brass, bronze and precious metals.

Overly Manufacturing Company

Dept. AR-29

Greensburg, Pennsylvania

Product Reports



Improved PVC Waterstop

The new *Hydrojoint* polyvinylchloride waterstop features improved multi-ribs which increase holding power, and a center bulb which has been designed to withstand the pressures caused by concrete movements. Strong, lightweight and easy to handle, the waterstop may be bent around corners or formed in curves, and can be quickly and easily spliced on the job. *W. R. Meadows, Inc., 26 Kimball St., Elgin, Ill.*

Durable Teakwood Flooring

Genuine teakwood flooring manufactured by Thai-Teak Products Co. of Bangkok, Thailand, introduces to this country a new concept in hardwood flooring decor and utility. Unique among woods in its combination of strength, longevity and resistance to vermin and rot, teakwood also has the capacity to repel fire and water. Tests indicate that it will out-perform any natural or synthetic flooring available today in dimensional stability, durability and minimum care, which suggests possible use in institutional and commercial buildings as well as in residences. *Thai-Teak* flooring comes in tongue and groove strips, random widths, and four parquetry patterns. It is sold in this country by *Bangkok Industries, Inc., 1545 W. Passyunk Ave., Philadelphia 45, Pa.*

HASKELITE—

the Curtain Wall Panel that's permanently insulated !

(It never absorbs moisture)

Warm climate . . . cold climate . . . Haskelite curtain wall panels mean permanent insulation! For here is the one curtain wall panel that is unaffected by moisture.

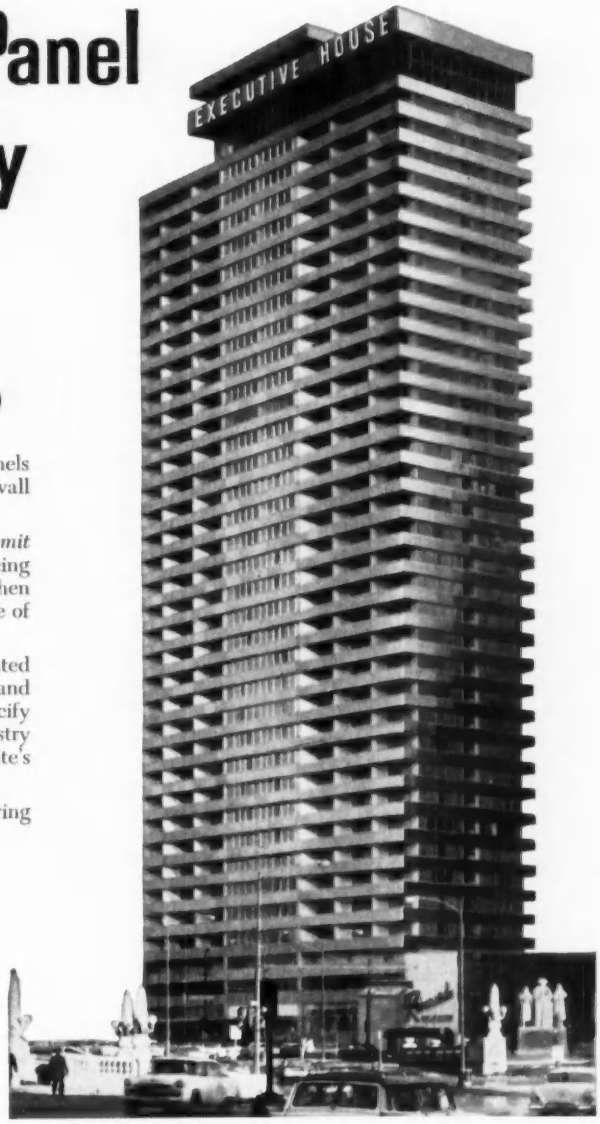
And here's why: Haskelite cores will not *absorb* or *transmit* moisture. Each Haskelite panel is constructed with the facing of your choice bonded to an interband, when required, and then to a foam core. Result: insulating value that lasts for the life of the panel.

To meet your specific requirements, Haskelite laminated panels are available in a wide range of stock sizes, thickness and facings . . . or in special sizes to your order. And you can specify Haskelite panels with confidence, for in the laminating industry no other manufacturer has Haskelite's experience . . . Haskelite's know-how.

For complete information write: Haskelite Manufacturing Corporation, Dept. BQ-4, Grand Rapids 2, Michigan.

- **Lightweight . . . easy to erect!**
- **High impact resistance!**
- **Flat, wave-free surface will not buckle—unaffected by temperature changes!**
- **Unlimited choice of facings—plastic; stainless steel; aluminum; porcelain; many others!**
- **Permanent insulation—does not absorb moisture!**

SEE HASKELITE CATALOG IN SWEETS ARCHITECTURAL FILE 3E/HA



EXECUTIVE HOUSE . . . designed for lasting beauty, the new 40-story Executive House in Chicago features Haskelite stainless-steel-faced, glass-foam-core curtain wall panels. Architect, Milton M. Schwartz & Associates, Inc., Chicago; Contractor, Wacker Construction Co., Chicago.

Haskelite Architectural Doors

• Architectural doors have been added to the line of quality doors built by Haskelite. Newly introduced hollow core doors, now available to specification, are specially built for use in institutional or commercial buildings. Complete range of standard sizes—or may be ordered in special lengths in a wide variety of facings.

HASKELITE®

HASKELITE MANUFACTURING CORPORATION
Grand Rapids 2, Michigan

A subsidiary of Evans Products Company, Plymouth, Michigan

A continuing series of distinguished schools, office buildings, churches, hospitals and industrial structures using NORTON DOOR CLOSERS

NORTON'S PROVED DEPENDABILITY DICTATED CHOICE OF DOOR CLOSERS

ARCHITECT: HARRY T. MAC DONALD, A.I.A.
CONTRACTOR: STIGLBAUER BROTHERS

New Senior High School in Downey, Calif., Has a Norton Door Closer on Every Door

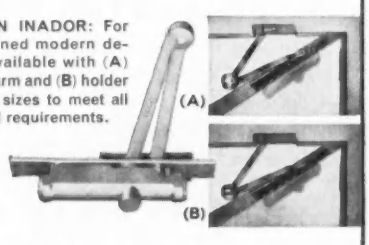
Ruggedness is a prime requisite for door closers in any school attended by over 2,000 students. This need has been satisfied in the distinctive new Senior High School at Downey, Calif. ...and also the new West Junior High School. All doors in both schools are equipped with Norton Door Closers. The choice was influenced by the fact that thousands of Norton Door Closers are still in daily use in some of America's best-known public buildings after serving continuously 30 years and longer. For fully illustrated data on these and other Norton Door Closers, including important new models, consult the current Norton catalog #57. Write for it today.

NORTON® DOOR CLOSERS

Dept. AR-49, Berrien Springs, Michigan

Complete Norton Line Meets Every Door Closer Need

NORTON INADOR: For streamlined modern design; available with (A) regular arm and (B) holder arm...4 sizes to meet all standard requirements.



NORTON 750: New corner design with concealed arms, for all types of doors, particularly narrow-rail doors.

NORTON SURFACE-TYPE: For all installations where concealment is not essential.

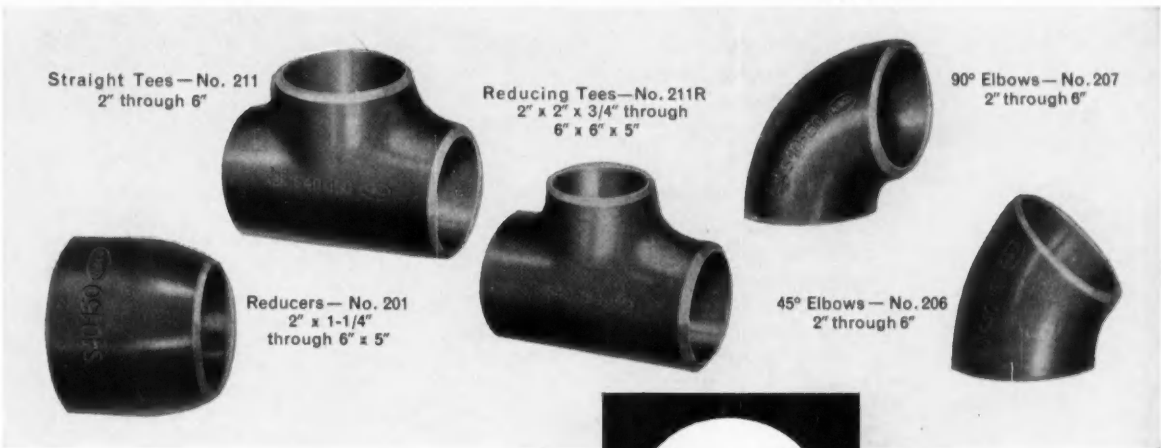
NORTON 703-N Compact surface-mounted type... 1⅛ inch projection.

HUSKY

150-LB. WELDING FITTINGS

HAVE

TWICE THE STRENGTH ...TWICE THE LIFE !



HUSKY SYSTEMS ARE STRONGER —
because nothing is cut away from the pipe to form threads. This means that Husky fittings provide a "double strength" system without weak links at each fitting joint.

HUSKY SYSTEMS ARE COMPETITIVE
In nearly every instance Husky welding fitting installations cost the same (or less) than those using threaded fittings because of time saved in joining.

HUSKY IS THE FIRST!
There are no other fittings on the market specifically designed to weld normal 150 lb. steel piping systems.

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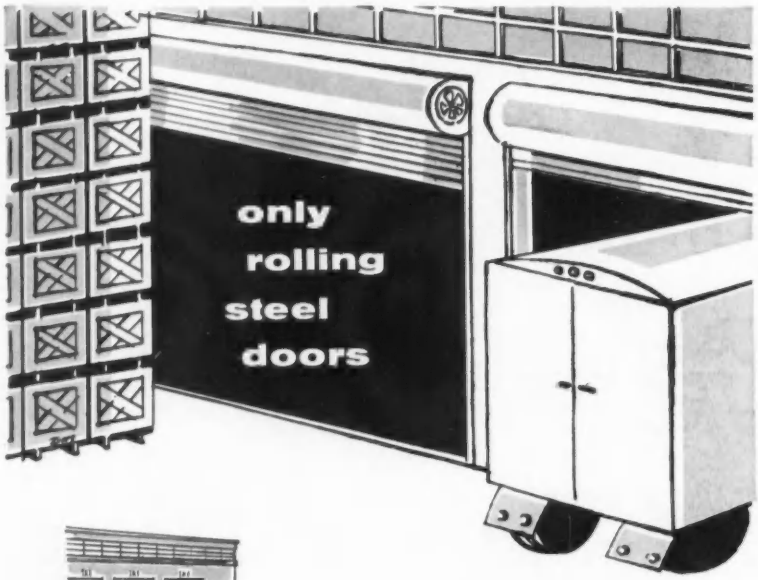
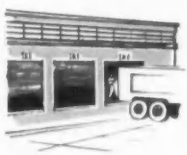
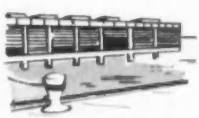
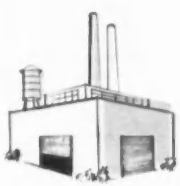




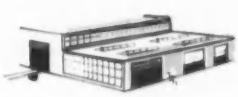
warehouses



pier sheds



power plants



manufacturing plants

provide the security and durability of steel

The **all steel construction** of Balfour Rolling Doors assures long, maintenance-free life and provides the **maximum protection** against fire, vandalism, wind, and corrosion.

save so much space

Balfour Doors coil into compact overhead units. Areas above door openings can be utilized for windows, skylights, loading chutes, lifts or crane rails . . . adjacent areas remain free for passage doors, windows, checking booths, offices, etc.

are so versatile

Easily installed and adaptable to all building conditions, Balfour Rolling Doors are custom manufactured to specific opening requirements with either motor or manual operation.

Many openings in your next building project can best be closed with Balfour Rolling Steel Doors. For additional information see our catalog in Sweet's, contact your local Balfour representative, or write:

WALTER BALFOUR & CO. INC., BROOKLYN 22, N. Y.

Balfour rolling doors

steel service doors
automatic fire doors
pygmee counter doors
steel grilles

Office Literature

continued from page 228

Marcolite Skylights
(A.I.A. 12-j) Details sizes, styles, mounting methods for eight models of aluminum and fiber glass panel skylights. *The Marco Company, 45 Greenwood Avenue, East Orange, New Jersey**

Industrial Burners
(A.I.A. 30-G) Folder 5807 describes and illustrates the *AirRing* series of industrial burners with built-in fuel and air systems. 4 pp. *Iron Fireman Mfg. Co., 3170 West 106th St., Cleveland 11, Ohio**

Aluminum Expansion Joint Covers
(A.I.A. 4-E-11) Details complete line of aluminum expansion joint covers for interior floors, walls and ceilings, and exterior walls. Catalog 7, 4 pp. *Architectural Art Mfg. Co., 3239 N. Hillside, Wichita 14, Kan.*

The Free Access Floor
Contains drawings, illustrations, specifications, typical installations and elevations, and a discussion of the support assembly for *Elaflor* elevated aluminum flooring for computer rooms and other business machine areas. 8 pp. *Liskey Aluminum, Inc., Box 506, Glen Burnie, Md.*

Condensed Style Catalog
Reviews complete line of plumbing fixtures and related items. 36 pp. *Universal-Rundle Corp., New Castle, Pa.**

Aluminum for Architecture
(A.I.A. 15-J) Contains design information on architectural applications of aluminum, including a detailed listing of the properties and uses of aluminum alloys, and a section on special finishes available. 12 pp. *Olin Aluminum, Metals Div., Olin Mathieson Chemial Corp., 400 Park Ave., New York 22, N. Y.**

Reznor Space Heaters
Gives complete engineering data, construction details and specifications on redesigned line of heavy duty space heaters. 8 pp. *Reznor Manufacturing Co., Mercer, Pa.**

Sliding Door Hardware
(A.I.A. 27-A) General information on features, installation and packaging of each series of sliding door hardware is supplemented by photos, details, specifications and ordering data. Catalog Section I, 68 pp. *Grant Pulley and Hardware Corp., New York, N. Y.*

**Additional product information in Sweet's Architectural File, 1958*

more literature on page 284

When it rains, it shines

On a rainy day in Chicago, the Morton Salt Building shines. It has Stainless Steel curtain walls, and rainfall keeps them clean. They may need an occasional washing, but no painter, scraper, or sand-blaster will ever have to touch the Stainless Steel walls. Think of the savings in maintenance!

Low first cost, too. The Stainless Steel panels are much lighter —and less expensive. Construction time and labor costs are low because the panels are factory-assembled into complete floor-to-ceiling wall units and delivered ready to install. A small crew hoists them and bolts them into place.

The panels are 8′6″ wide, 5′9″ high and 2″ thick. Exterior is 20-gage, 18-8, Type 302 Stainless Steel. Vertical flutes pressed into each panel eliminate optical distortion. The sash, mullions and all detail in the curtain wall areas are Stainless Steel.

Wouldn't cities be beautiful if all buildings looked as good as the Morton Company's? Remember Stainless Steel curtain walls. They're well worth their salt.

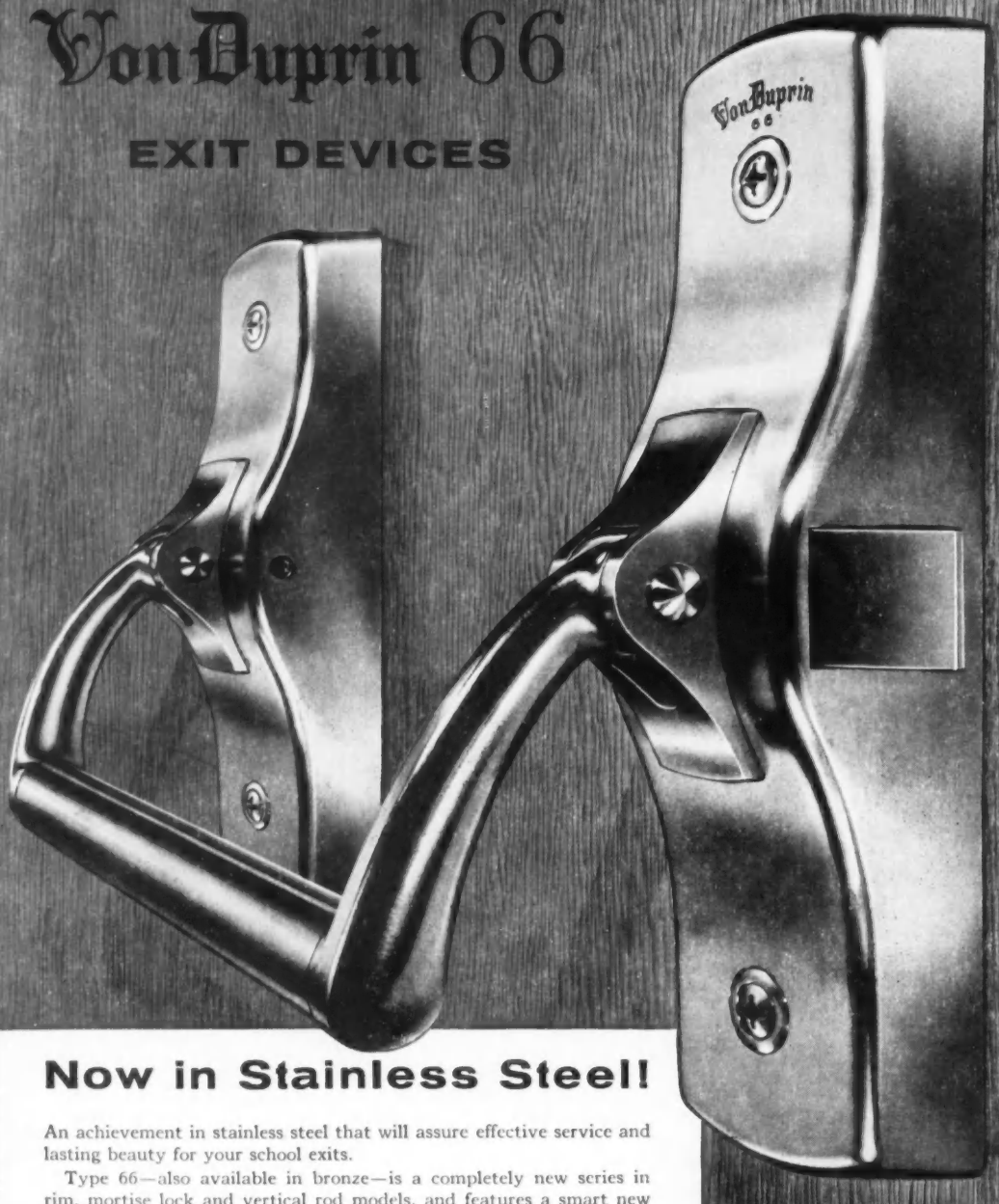
USS is a registered trademark

Morton Salt Building, Chicago, Ill.
Architects: Graham, Anderson, Probst & White, Inc., Chicago, Ill.
General Contractor: Sherman, Olson, Inc., Chicago, Ill.
Panel Stamping: Commercial Shearing & Stamping Co., Youngstown, Ohio

USS **United States Steel**

Von Duprin 66

EXIT DEVICES



Now in Stainless Steel!

An achievement in stainless steel that will assure effective service and lasting beauty for your school exits.

Type 66—also available in bronze—is a completely new series in rim, mortise lock and vertical rod models, and features a smart new line of matching outside trims.

For the finest expression of "the safe way out!", ask your architect or hardware consultant for full details on the Von Duprin 66. Or write direct for your copy of Bulletin 581.

VONNEGUT HARDWARE CO. • VON DUPRIN DIVISION
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Patterns that lead to beautiful interiors. When you specify Panelyte, America's style leader in plastic laminates, you choose from a vast and richly varied line. You discover exclusive colors and patterns to enhance counter tops, walls, any interior surfaces. You choose a durable, quality material that has proved its lasting value. You add permanent elegance to your own imaginative decor. That's the beauty of creating with Panelyte.

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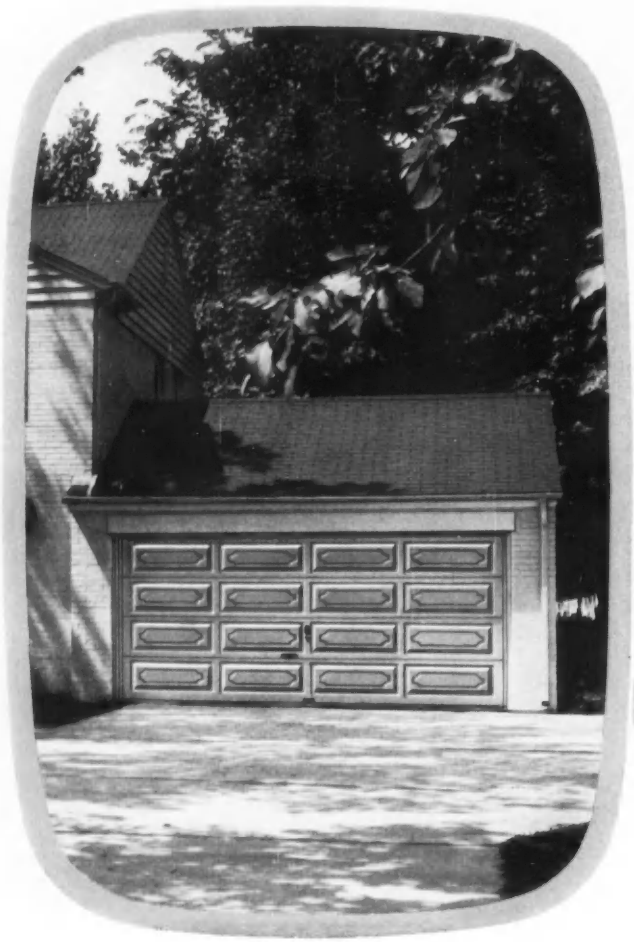
Reflection of Quality in Garage Doors



No matter how you look at it, a Ro-Way Garage Door reflects the finest in quality.

In styling, for example, you can see at a glance how its clean, simple lines enhance the design of the homes you build.

In construction, its selected woods and husky hardware are put together with cabinet-maker skill for lasting service . . . muntins, rails and stiles precision squared for perfect fit; mortise and tenon joints both glued and steel pinned for extra strength; sections rabbeted to make weather-tight joints; surfaces smoothly sanded for finest finish.

In operation, too, every Ro-Way door is unsurpassed. With specially designed Taper-Tite track, ball bearing rollers, and springs tension-balanced to the weight of the door, smooth, quiet performance is assured for years.

Yet, with all this quality Ro-Way garage doors are competitively priced. So why settle for less? Call your Ro-Way distributor for full details—he's listed in the Yellow Pages.

For added convenience, install the famous RO-WAY Model 80 Electric Operator with push-button or remote radio control

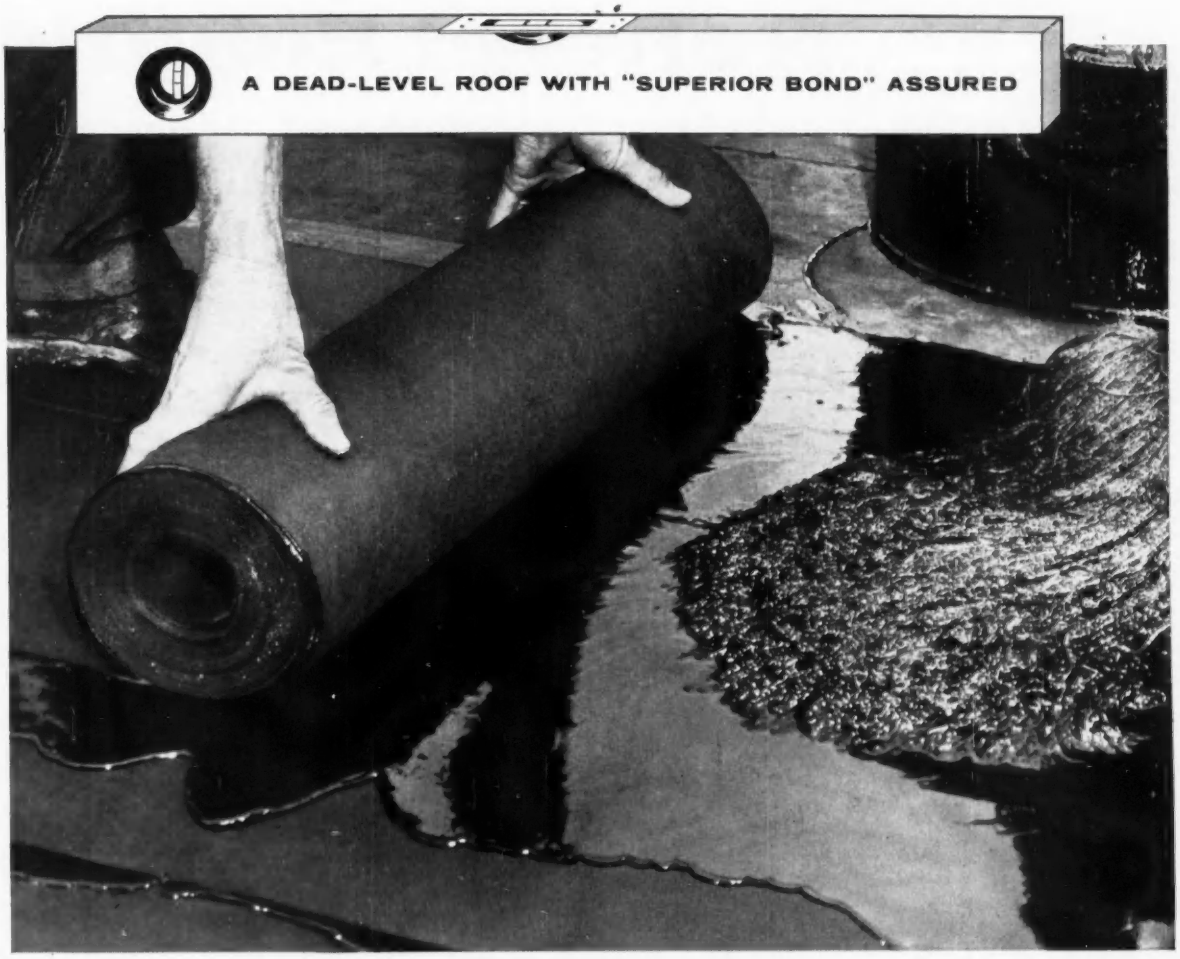
ROWE MANUFACTURING CO.

1208 Holton Street • Galesburg, Illinois

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY

there's a Ro-Way **Rō-Way OVERHEAD TYPE DOORS** *for every Doorway!*

RESIDENTIAL • COMMERCIAL • INDUSTRIAL



Johns-Manville *Aquadam* Built-Up Roofs

pay off in longer roof life and maximum protection

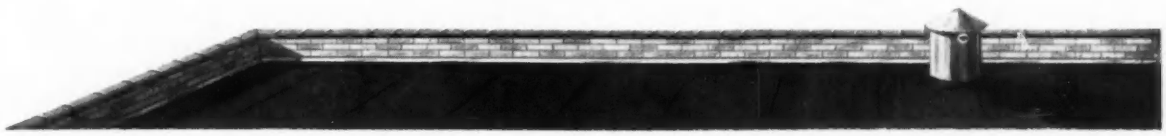
AQUADAM ROOFS take their name from a superior cementing agent developed by Johns-Manville. This unique bitumen, Aquadam, possesses the best features of coal tar pitch and of asphalt without their weaknesses. It is the best bitumen on the market for roofs with inclines from dead-level to ½ inch per foot. It is used for both smooth-surfaced asbestos roofs and gravel- or slag-surfaced roofs.

The picture above shows how Aquadam spreads, wets and saturates the roofing felts uniformly. And, as the felts are mopped and broomed-in, the exceptional adhesiveness of Aquadam assures a thorough bonding together of the plies.

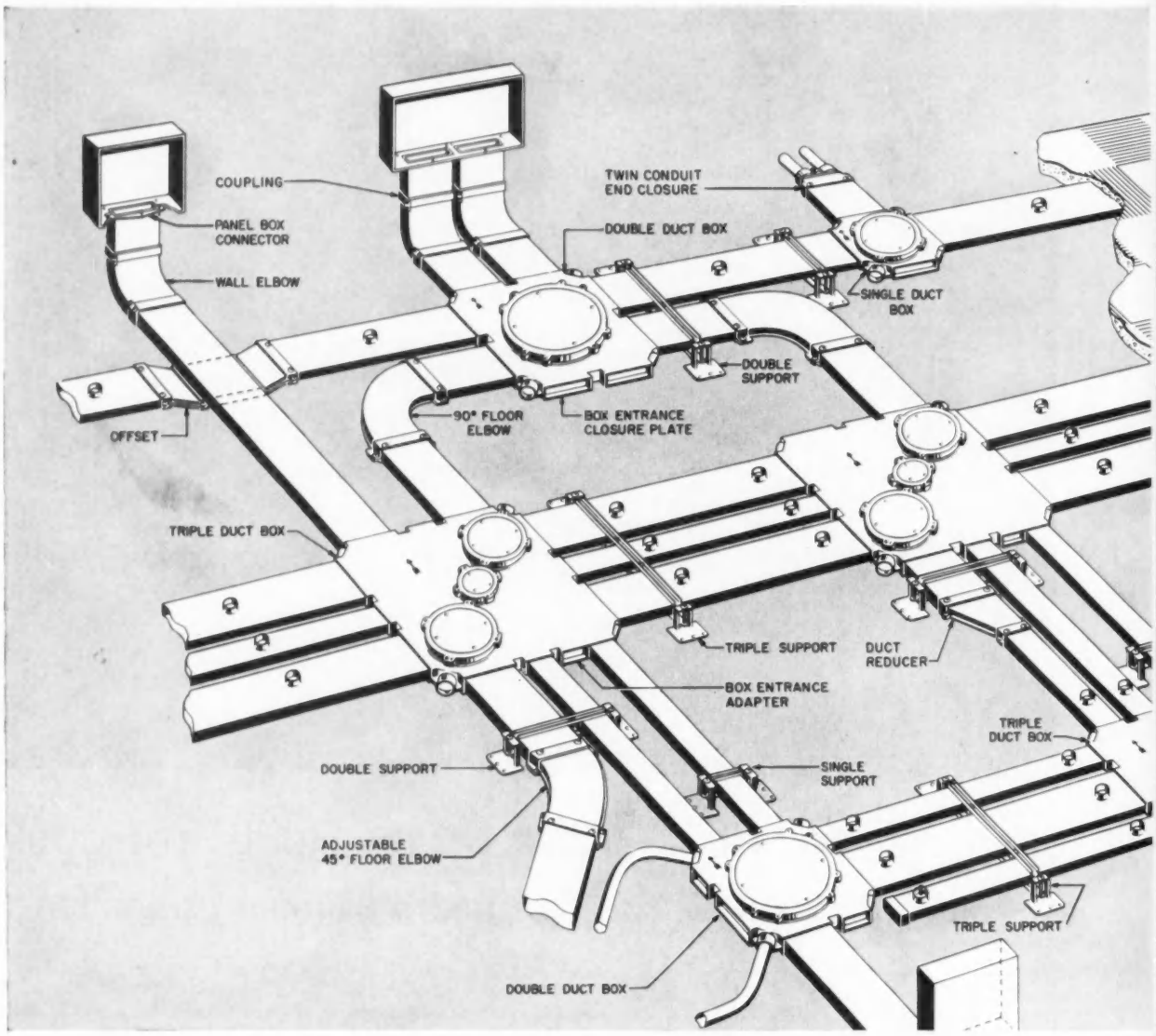
Besides this "superior bond," an Aquadam roof provides these other advantages: excellent self-healing properties; exceptional ability to expand and contract with normal deck movement; ability to withstand water when a downpour floods the roof; and proven weather resistance under wide-ranging climatic conditions.

To give your clients the best roof protection, specify Johns-Manville Aquadam Built-Up Roofs—and be sure. For a copy of booklet "J-M Aquadam Built-Up Roofs" write to: Johns-Manville, Box 158, New York 16, New York. In Canada, write 568 Lakeshore Road East, Port Credit, Ontario.

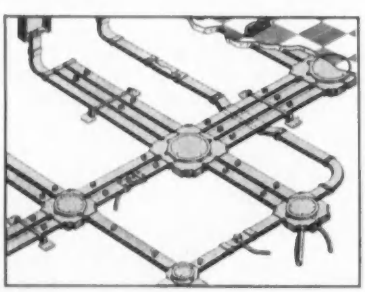
JOHNS-MANVILLE



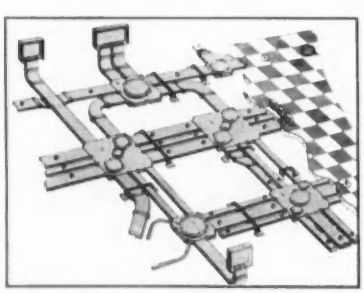
General Electric



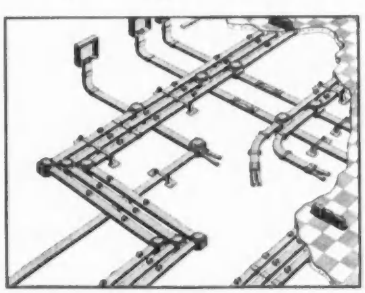
NOW General Electric's 4 great systems meet every design, cost, and



1. The G-E single-level standard duct system for installations where a standard underfloor layout is desired.



2. The G-E single-level BIG DUCT system for standard layouts where greater feeding capacity is required.



3. The G-E two-level duct system for layouts requiring great flexibility of feeding arrangements.

announces new...

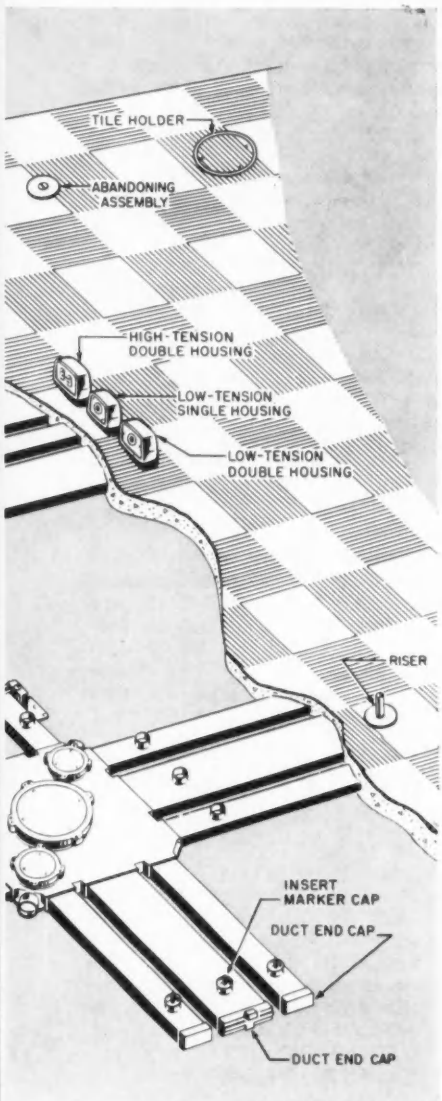
BIG DUCT

UNDERFLOOR WIRING SYSTEM

Large-capacity duct meets growing electrical needs

Here's your answer for standard layouts that need greater feeding capacity than you can get with a standard-size, single-level duct system. It's General Electric's new single-level steel BIG DUCT system, utilizing duct with an 8½-inch cross-sectional area. The system includes boxes, components, and accessories necessary to utilize BIG DUCT either by itself or in combination with the G-E single-level standard duct.

Junction boxes have been provided to accommodate runs of BIG DUCT as well as several combinations of BIG DUCT and standard duct. All height and leveling adjustments are made outside the box making it unnecessary to remove the cover. Duct entrances have been spaced so that, by using plugs and/or reducers, the new system may, if necessary, be used in connection with the duct and boxes of the G-E single-level standard duct system. The new General Electric single-level steel BIG DUCT system can be installed in any type of floor construction that has a minimum fill thickness of three inches.



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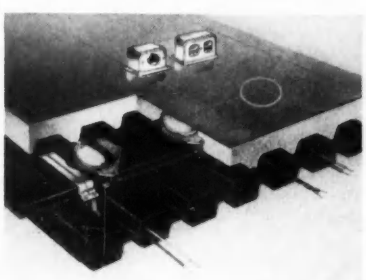
GENERAL ELECTRIC

installation requirement



4. The G-E cellular-steel floor wiring system which permits outlets in every 6 inches of floor area.

FOR COMPLETE INFORMATION on any G-E system—or to get the answer to any question you may have, send this coupon:

General Electric Company
Conduit Products Department, Section CU-87-44
Bridgeport 2, Connecticut

Please send me full information on:

☐ **G.E.'s new BIG DUCT wiring system and single- and two-level steel underfloor wiring systems.**

☐ **G.E.'s outstanding cellular-steel floor wiring system.**

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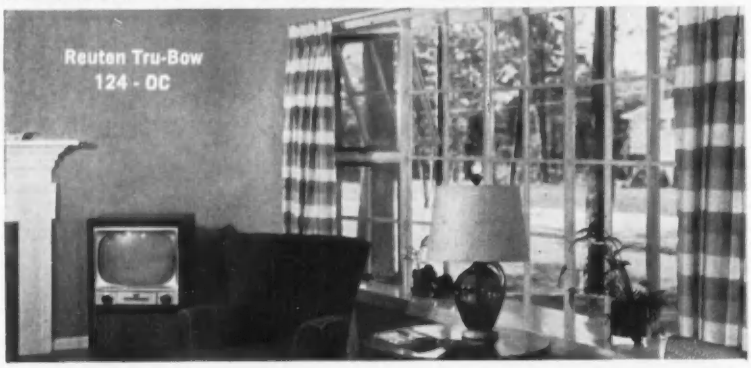
Add Beauty **INSIDE** *and* **OUTSIDE**



REUTEN TRU-BOW or TRU-WALL windows add dramatic, graceful exterior lines to any house. They permit unlimited expression of interior decorating ability.

Designs range from extreme fine-lined "Colonial" to the massive ruggedness of "Modern." REUTEN windows are available in over sixty combinations of styles, pane shapes, and vent positions. Some are designed for insulated glass.

Construction details include weathertight, smooth-fitted, "dovetail" joints . . . WOODLIFE treatment to resist age and insects . . . interior screens and storm panels on vents . . . custom quality at assembly line costs.

Additional information in Sweet's Architectural File 17c/Re, Sweet's Light Construction File 6c/Re or write:

TRU-BOW
TRU-WALL

REUTEN

FRED REUTEN INC.
CLOSTER, NEW JERSEY

Office Literature

Ideas In Action
Report No. U7-4 cites advantages of hanging beam bottoms with steel strapping, and gives charts and diagrams explaining how to calculate the size and spacing of straps for handling beam formwork. 6 pp. *Acme Steel Co., 135th St. and Perry Ave., Chicago 27, Ill.*

Haskelite Laminated Panels
Illustrates laminated structural panels and their uses. 8 pp. *Haskelite Mfg. Corp., 701 Ann St., N. W., Grand Rapids 2, Mich.*

Acoustical Products
(A.I.A. 39-B) Presents physical and acoustical characteristics, including flame resistance, light reflectance and sound absorption coefficients, of several types of acoustical products. Installation details are included. 8 pp. *Acoustical Products Div., Baldwin-Hill Co., 500 Breunig Ave., Trenton 2, N. J.*

Louverdrape Brochure
Outlines advantages of vertical blinds as window treatment, and gives data on light control, air control, heat reflectivity, heavy duty hardware, and fabrics. 16 pp. *Vertical Blinds Corp. of America, 1936 Pontius Ave., Los Angeles 25, Calif.*

RS Panels
(A.I.A. 17-A) Gives detailed information and specifications on *RS* ceramic tile faced, insulated curtain wall panels. 10 pp. *Ceramic Tile Panels, Inc., 217 4th St., N.E., Canton 2, Ohio**

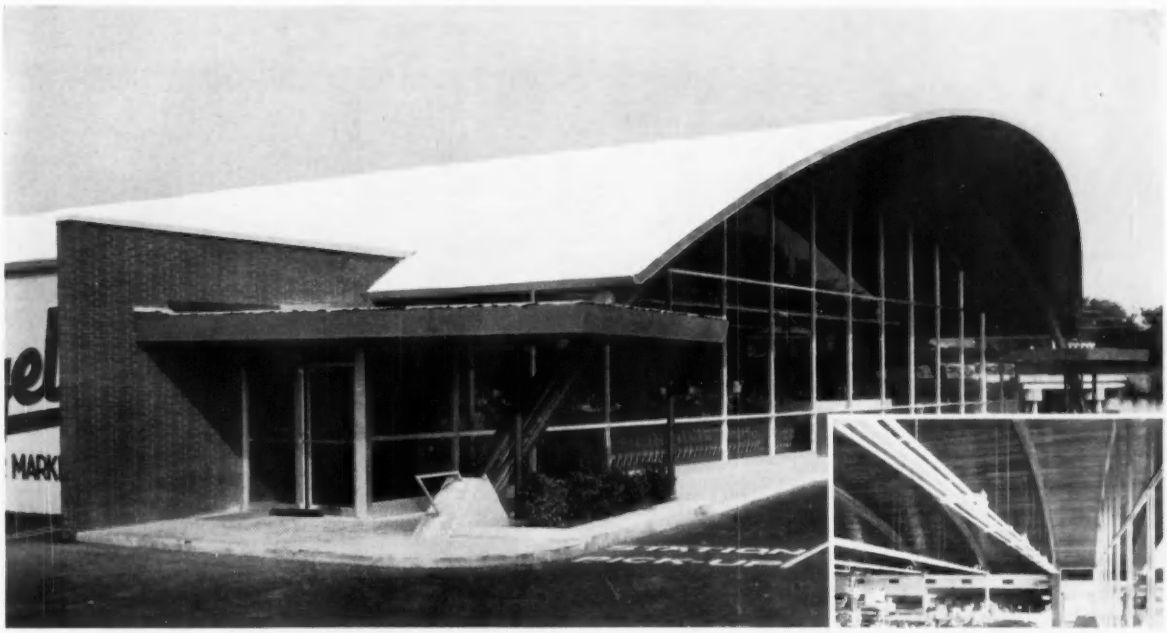
Saraloy 400
(A.I.A. 12-H) Bulletin 153-87 discusses advantages, physical characteristics and specifications for *Saraloy 400* pliable plastic sheet flashing. 4 pp. *Plastics Sales, The Dow Chemical Co., Midland, Mich.**

Smithcraft Area Illumination
Catalog offers complete selection information on basic standard equipment used in flexible new ceiling lighting system. *Smithcraft Lighting, Chelsea 50, Mass.**

Weis Compartments
(A.I.A. 35-H-6) Full-color illustrations and detailed descriptions of Weis toilet compartments in porcelain and baked enamel finishes are supplemented by "chips" of available colors. *Henry Weis Mfg. Co., Inc., Elkhart, Ind.*

**Additional product information in Sweet's Architectural File, 1958*

more literature on page 288



Siegel's Super Market, Richmond, Virginia
Contractor: Thorington Construction Co., Inc., Richmond, Virginia
Architect: J. Henley Walker, Jr., Richmond, Va.
The roof is supported by 10 Rilco Arches spaced 16' o.c. — nine arches span 90' and one spans 120'.

You May Quote Me

"I Love This Building"

Charles Siegel, president of Siegel's Super Markets, enthuses, "I love this building, as do our customers and our organization." It is both beautiful and practical.

The Rilco Laminated wood beams need no supporting columns. This makes the rearranging of stock simple and, according to Mr. Siegel Rilco deck provides excellent insulation. "We have two 30-ton air conditioning units and, due to the type of ceiling, use only one the entire summer."

"Many people have commented on the attractiveness of the building," writes the contractor. "The cost was approximately $11 per square foot, which included a paved parking lot. As the general contractor, we found the job very desirable from the erection standpoint."

Rilco laminated wood arches and beams allow full freedom of design—supply functional beauty. Each member is engineered and fabricated to specifications. Connecting hardware is furnished, every member fits. The warm wood beams and deck furnish their own attractive ceiling—need no additional decoration. For more information write your nearest Rilco office.

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works wonders with wood

Send for free Commercial Construction catalogue featuring wood laminated and fabricated structures.

RILCO LAMINATED PRODUCTS, INC.

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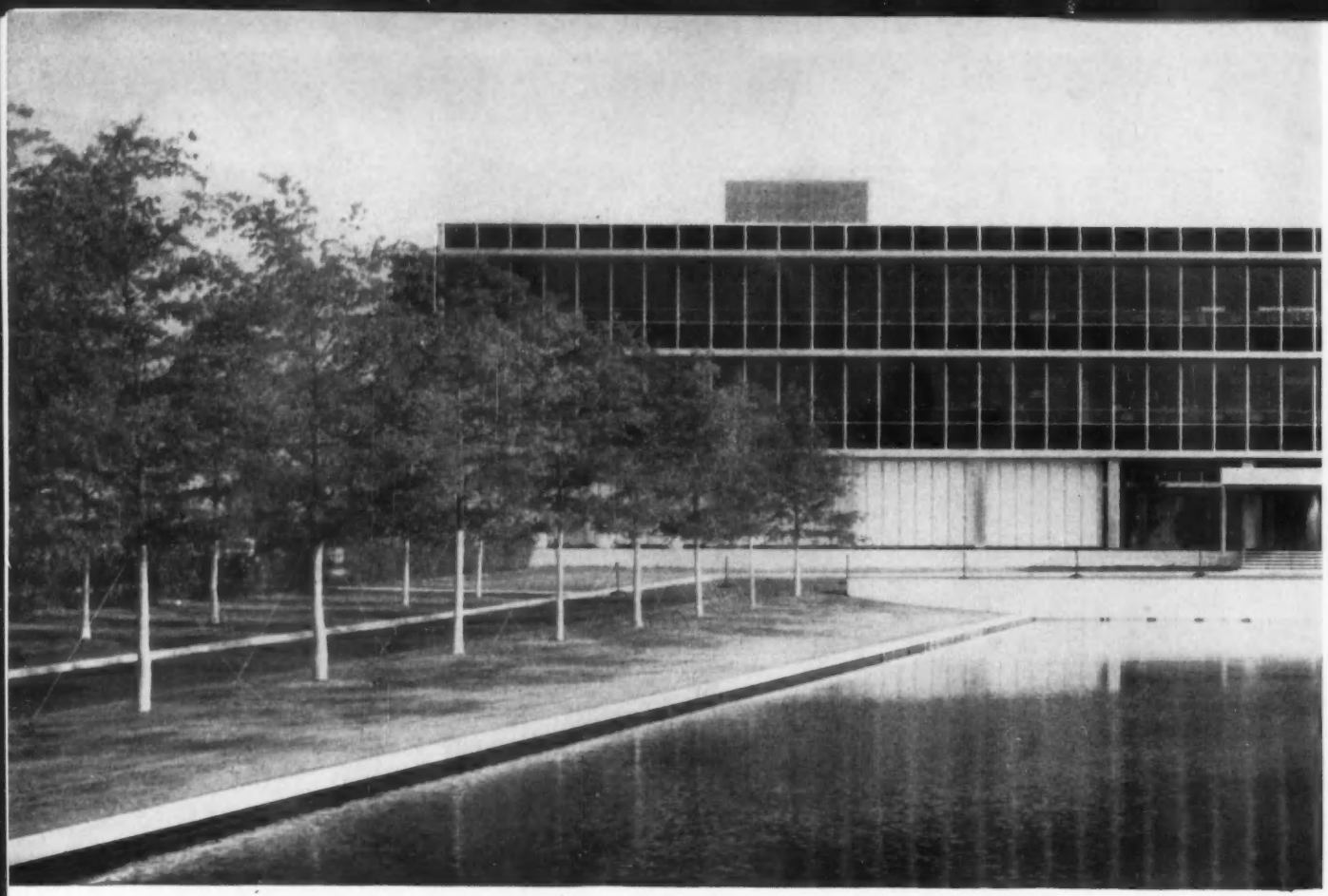
Architect: William F. Bernbrock — Moline, Ill.

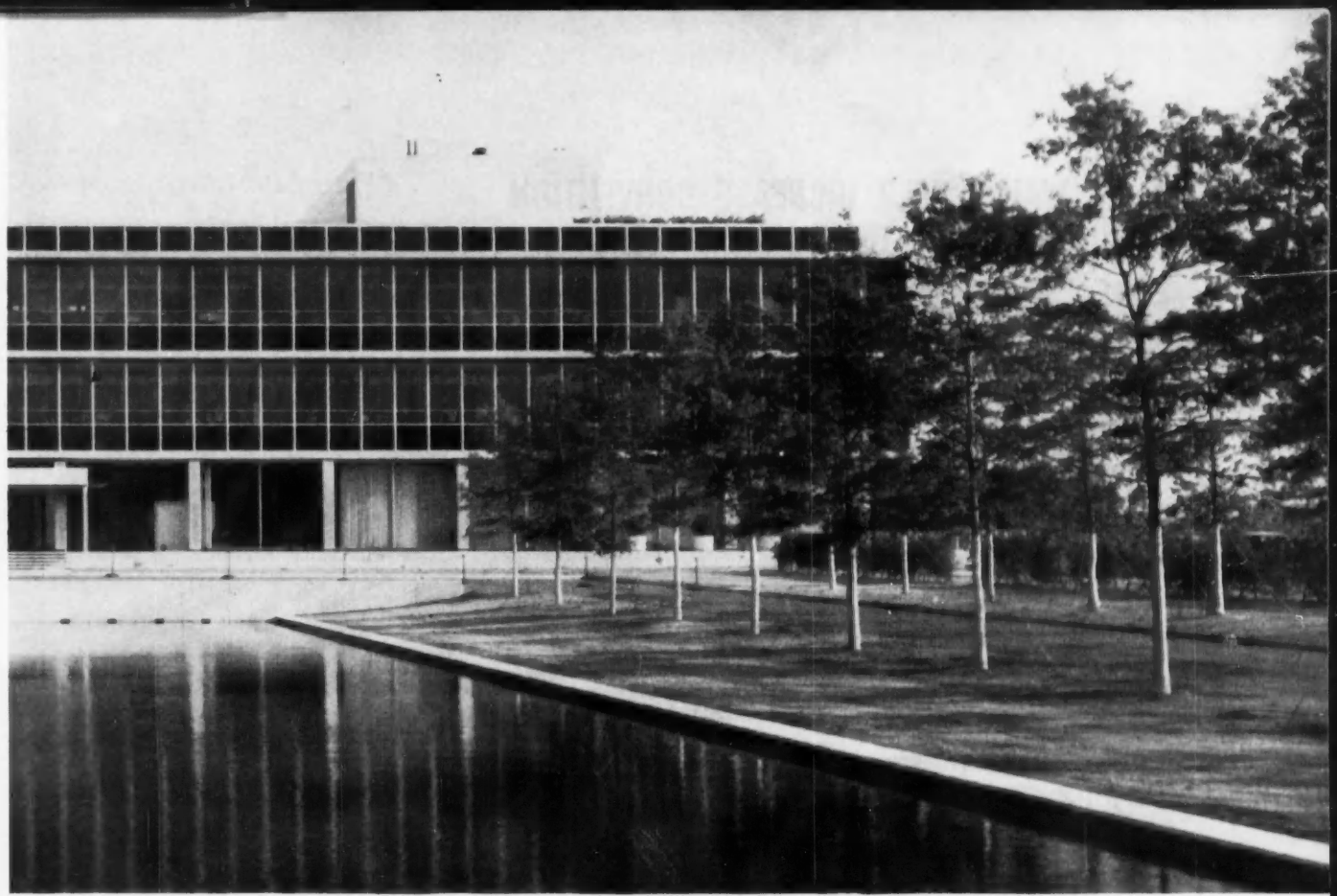
"Attention getting, compelling, at no extra cost."
White Spot Drive-In — Denver, Colo.
Architect: Richard S. Crowther — Denver, Colo.

"A result no other way obtainable."
Katz Drug Stores — Kirkwood, Missouri
Architect: Kivett & Myers — Kansas City, Missouri



• Maximum flexibility in space utilization is achieved at Reynolds through partitions that easily can be moved to expand or decrease area sizes. This can be accomplished without making costly changes in the lighting system. The Curtis wall-to-wall ceiling of light provides 80 ft. candles of maintained illumination. Attractive Hexcel Honeylite aluminum diffusers complement the inviting decor.

How a special Curtis Lighting system saved Reynolds Metals $50,000 . . .



■ Here is the new home of Reynolds Metals Company, Richmond, Virginia. It is dramatically placed at the end of a reflecting pool bordered by willow oaks. The classic beauty of the building is enhanced by this unusual setting. Architect: Skidmore, Owings & Merrill; Consulting Engineer: Ebasco Services, Inc.

Unique all-aluminum folding grids in 100 sq. ft. units cut installation time 8,000 man hours . . . provided wall-to-wall illumination with low brightness quality

Installing a lighting system so flexible it can adapt to any internal building change without relocation is quite a feat. But when that is accomplished at important savings it calls for exceptional engineering ingenuity. That's what Curtis Visioneers achieved with a special custom-made aluminum folding grid system at Reynolds Metals Company, Richmond, Va. The unique folding "packages" made it possible to install 100 sq. ft. of lighting at one time. Result: a saving to Reynolds of an estimated 8,000 man hours, or approximately $50,000. A wall-to-wall ceiling of light was created with a beautiful satiny aluminum lighting tone of low brightness quality. Over-all ceiling illumination solved the problem of how to obtain stationary lighting for a 100,000 sq. ft. area, even though wall partitions would be moved in the future. Write today for the name and address of the Curtis Visioneer in the principal city nearest you. Curtis Lighting, Inc., 6135 West 65th St., Chicago 38, Ill. In Canada: 195 Wicksteed Ave., Toronto 17, Canada.

CURTIS

Visioneers in Planned Lighting

■ Large office areas are as effectively illuminated as small areas with a high degree of visual comfort assured. In this special Curtis grid installation, aluminum materials were used throughout. Maintenance features of the system include ease of relamping, ready access to wiring, and simple replacement of the ballasts.

FOLDING WALLS HELP INCREASE CONVENTION BUSINESS AT ATLANTA'S BILTMORE

1

Fairhurst®
UNITFOLD® FOLDING WALLS

2

3

Atlanta's explosive growth as a convention city is responsible for the all-new 10th floor of the Biltmore. 7 of 11 meeting rooms, designed for conferences or private dining, are connected with Unitfold Folding Walls. These areas can be varied to serve groups from 25 to 160 persons.

In the example above, Unitfold is faced with the same paper as the permanent walls (photo 1). Photo 2 shows Unitfold withdrawn and entirely hidden in the pockets at right; contrasting pocket doors add interest to room decor. Photo 3 demonstrates that there are actually **two** walls, separated by air space. All the Biltmore walls are of this type — one of the Fairhurst features that means the highest sound retardance known in movable walls. Note close clearance at column. This is Unitfold — solid, rigid, with all the characteristics of a permanent wall.

Write Dept. AR for free information and estimates

John T. Fairhurst Co., Inc.
45 West 45th Street New York 36, N. Y.
FAIRHURST . . . First Name in Folding Walls

Office Literature

Porcelain Enamel Panels
(A.I.A. 17-A) Three four-page brochures contain detailed information —suggested specifications, installation data, sizes, colors and patterns, etc.—on *AllianceWall* line of veneer and insulated porcelain enamel on steel panels. *AllianceWall Div., AllianceWare, Inc., Alliance, Ohio*

Masonite Panel Products . . . for Interior Applications
(A.I.A. 23-L) contains tables showing properties and available sizes, descriptions of various hardboard types, directions for working with *Presdwood*, application details and architectural specifications. 20 pp. A similar eight-page guide on exterior applications is also available. *Service Bureau, Masonite Corp., 111 W. Washington St., Chicago 2, Ill.*

Nevamar Color Selector
(A.I.A. 35-C-12) Contains full-color illustrations of patterns and woodgrains in *Nevamar* line of high-pressure laminates. 4 pp. *Dept. CS, The National Plastic Products Co., Odenton, Md.*

Alumiline Entrance Catalog
(A.I.A. 16-E) Includes illustrations and sectional views of complete line of doors and entrance frames, sliding doors and specialty custom products. 16 pp. A similar Store Front Catalog (A.I.A. 26-D) is also available. *The Alumiline Corp., 10 Dunnell Lane, Pawtucket, R. I.*

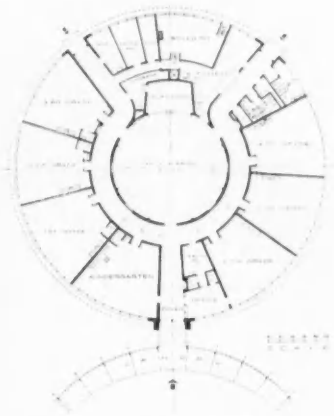
Decorative Tubing
Describes new decorative aluminum tubing embossed in stucco, diamond, leather, square and pebble patterns. 4 pp. *Kaiser Aluminum & Chemical Sales, Inc., Dept. NR-29, 919 N. Michigan Ave., Chicago 11, Ill.*

Design and Specification Handbook
(A.I.A. 15-R-1) Gives selection information and specifications on cast and fabricated "three-dimensional" metal letters and building specialties. 54 pp. *Nelson-Harkins Industries, 5301 North Kedzie Ave., Chicago 25, Ill.*

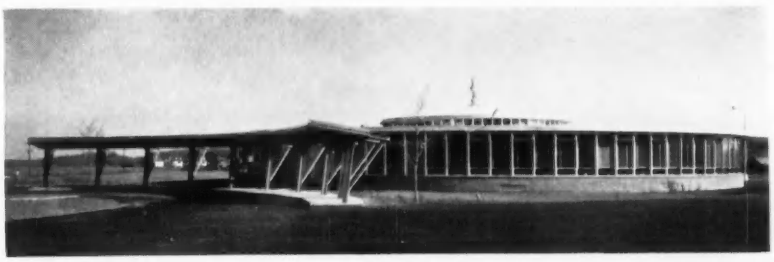
Thermostatic Mixing Valve
Describes and illustrates *Simix* line of precision thermostatic water mixing valves. 12 pp. *Abigo Co., 45 West 81st St., New York 24, N. Y.*

Literature Requested
Dr. Ing. Cesare Bachi, Casella 3637, Milano A.D., Italy

**Additional product information in Sweet's Architectural File, 1958*



FLOOR PLAN: Hereford Township Elementary School, Berks County, Pennsylvania
Architects: Wolf and Hahn, A.I.A., Allentown, Pennsylvania



Unique round school design saves estimated $100,000

On the principle that the circle has the smallest periphery enclosing the largest area, Architects Rollin L. Wolf and Willard S. Hahn designed this outstanding seven-room school in Hereford Township, Berks County, Pennsylvania. From a cost standpoint alone it is immensely successful. Many benefits can be attributed to this basic design.

Corridors are shorter, more daylight per room is achieved, center area serves as auditorium, cafeteria, recreation area and multipurpose meeting room. Orientation on the 10-acre site provides for economical expansion in the future. Tectum decks over exposed bar joists helped keep costs in line also, providing a structural, insulating, acoustical and firesafe deck-ceiling with a pleasant decorative effect.

Almost fifty percent of all Tectum produced for the past few years has gone to the school expansion programs of communities like this one. Tectum offers the quality, the benefits of a multi-purpose board with the advantages of lower erection and maintenance costs. Have you investigated the many advantages of building with Tectum? Send today for complete information.

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YOU CAN JUDGE FOR YOURSELF THE BENEFITS OF THESE MODERN ELEVATORS! Every executive who has witnessed this demonstration has been impressed by the automation Westinghouse has built into elevatoring. If you are one of the building executives who is planning to build—or modernize—see this eye-opening demonstration.

Just 30 minutes of your time now can show you what Westinghouse research and development in elevatoring can do for the efficient operation of your building for the years ahead.

Actually experiencing this 30-minute eye-opening demonstration will make you confident that your decision for this major capital investment is sound. Make arrangements now by writing on your letterhead to: R. H. Wagner, General Manager, Westinghouse Elevator Division, 150 Pacific Avenue, Jersey City 5, New Jersey—or call the Westinghouse Elevator Division office in your city.

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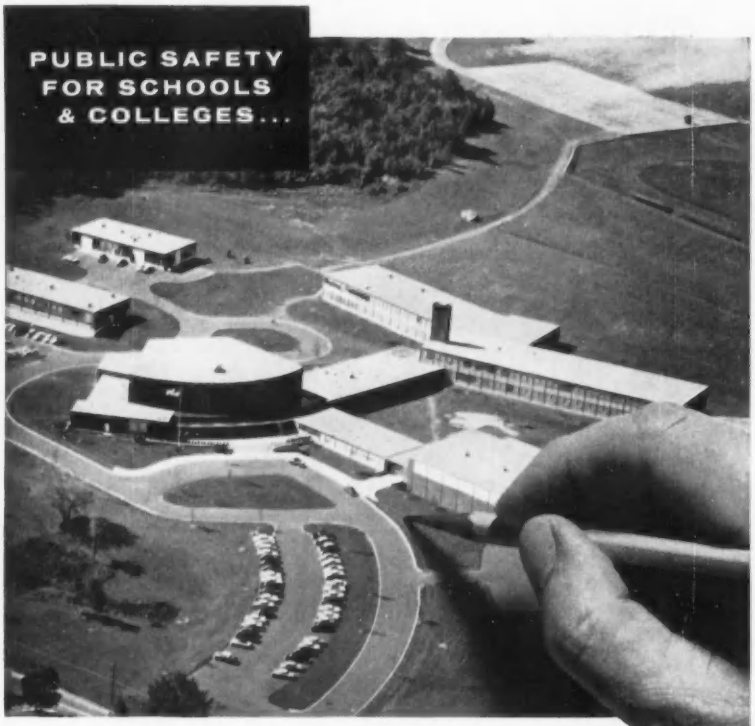

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The Record Reports

On the Calendar

April

1 28th Annual Meeting, Inter-Society Color Council—Hotel Statler-Hilton, New York

1ff Exhibition of work of Joan Mirò; through May 10—Museum of Modern Art, New York

3-4 79th Annual Convention, Michigan Engineering Society—Student Union Building, University of Michigan, Ann Arbor

5-10 Fifth Nuclear Engineering and Science Conference, Seventh Hot Laboratories and Equipment Conference, and Seventh Atomic Energy in Industry Conference—Public Auditorium, Cleveland

7-8 Eighth Annual Meeting, Building Research Institute—Penn-Sheraton Hotel, Pittsburgh

9ff "Architecture: Man's Space," exhibition co-sponsored by Wisconsin Chapter, A.I.A., and Milwaukee Art Center; through May 17—County War Memorial Building, Milwaukee

12-17 21st Annual Convention, National Association of Architectural Metal Manufacturers—Monteleone Hotel, New Orleans

13-17 South Atlantic Regional Conference, A.I.A.; Theme: "The Architect in this Technical Age"—Aboard MS *Italia*, Charleston, S. C.-Nassau

14-15 Fourth Biennial Conference on Electric Heating, sponsored by American Institute of Electrical Engineers—Bellevue-Stratford Hotel, Philadelphia

16-17 11th Annual National Engineering Conference—Dinkler-Tutwiler Hotel, Birmingham

24-25 Great Lakes Regional Conference, A.I.A.—College of Architecture and Design. University of Michigan, Ann Arbor

26-30 28th Annual Conference, American Institute of Decorators—Plaza Hotel, New York

May

1-7 Annual Convention, Royal Australian Institute of Architects—Brisbane, Queensland

3-6 Annual Meeting, Air-Conditioning and Refrigeration Institute—The Homestead, Hot Springs, Va.

3-7 Eighth Annual Convention, National Parking Association —New Orleans

continued on page 300

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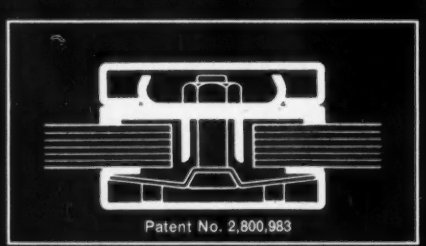
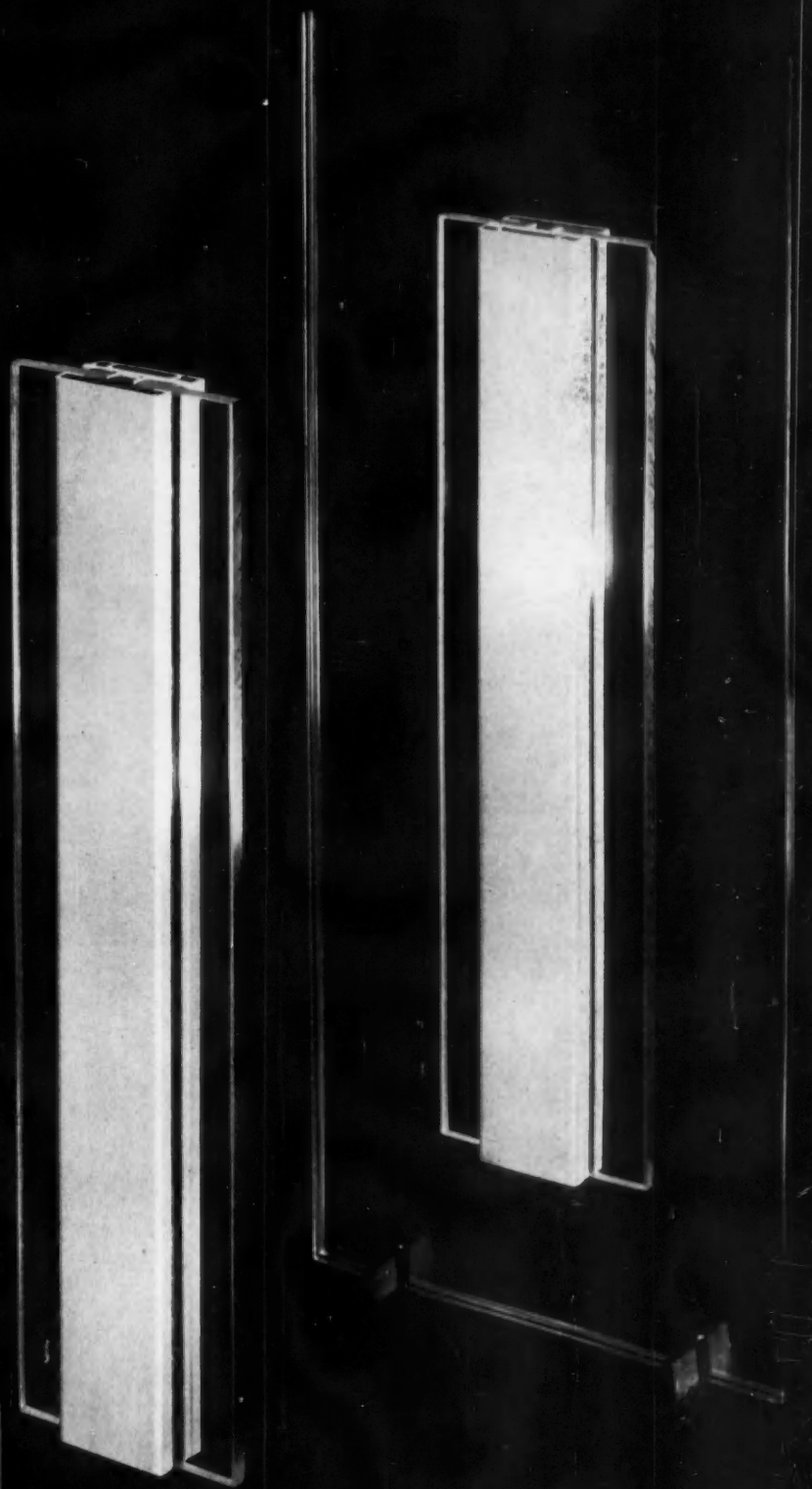
NO. 33
MUNTIN BAR

The mirror reflects it better than we can say it: The PITTCO No. 33 Muntin Bar has stunning simplicity of line because it has no visible fastenings—a result of PPG's constant effort to eliminate visible fastenings wherever possible in PITTCO members.

Consult your PITTCO Store Front Metal Representative for information on complete line of PITTCO glass-holding and decorative metal members, or refer to Sweet's Architectural File—Section 21.



Patent No. 2,800,983



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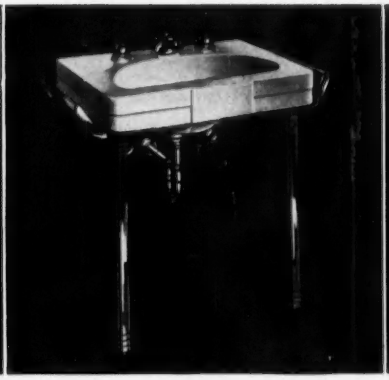
The big change has come! Today quality is the keynote in *all* housing. And in residential plumbing, no name expresses quality so convincingly as Crane. No other plumbing is so widely preferred—a recent survey shows a 28% preference for Crane over any other brand!

Today the Crane plumbing line offers you even greater scope in planning: New fixtures, smartly styled by Henry Dreyfuss; new convenience in lavatories, closets and controls. Seven beautiful colors, including the new Desert Turquoise for matched bathroom harmony. And as always, the same high standard of quality in hidden piping that makes your client's satisfaction complete. Get all the facts—and a showing—from your Crane architects' representative.

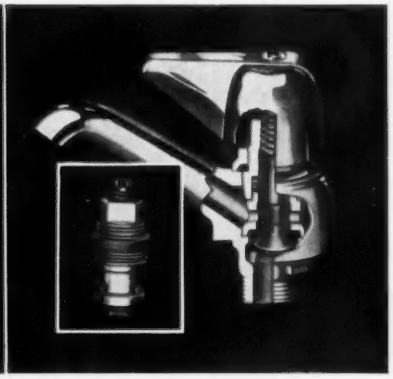
100 top designers select Crane as "best designed plumbing of modern times"

The Institute of Design of the Illinois Institute of Technology polled 100 top designers, architects and design department heads of manufacturing firms and universities around the world, asking each of them to list the best designed products of modern times. First award for plumbing fixtures was given the Crane Criterion group, represented here by the Criterion lavatory and the Criterion closet and bath on the opposite page.

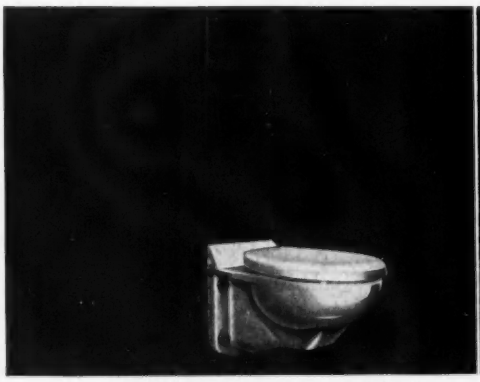
New elegance comes to the bathroom with this new Crane *Crown* lavatory for counter-top installation. Available in Crane colors or white.



With its smart, semi-oval basin and panel front, the Crane *Diana* vitreous china lavatory is styled for the most modern bathroom.



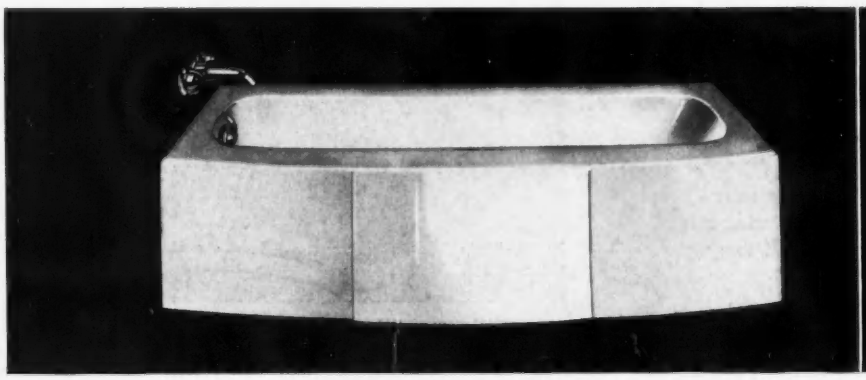
Dial-ese controls close with flow of water, not against it . . . prevent dripping. A single, inexpensive unit fits all *Dial-ese* controls.



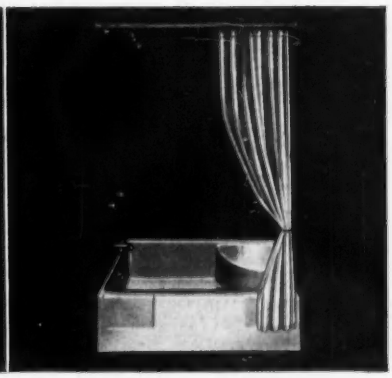
This new Crane *Walsan* off-the-floor closet saves floor space, permits easy cleaning under the bowl. Note the sculptured design. Tank is in the wall, yet easily accessible.

Quality unmistakable! Crane *Criterion* closet of scientific, modern design with hygienic, correct-posture seat. Efficient flushing with quiet whirlpool action.

The all-new *Criterion* shower head gives a lifetime of wear with unerring performance. Non-clogging, self-cleaning. Adjusts to any size spray. Lever Lucite handles.



Graceful design and practical utility are joined in this Crane *Criterion* recessed bath of easy-to-clean porcelain enamel on durable cast iron.



The compact *Lahoma* bath. Made of *Duraclay*—the exclusive Crane vitreous glazed earthenware that's so easy to clean and keep clean.

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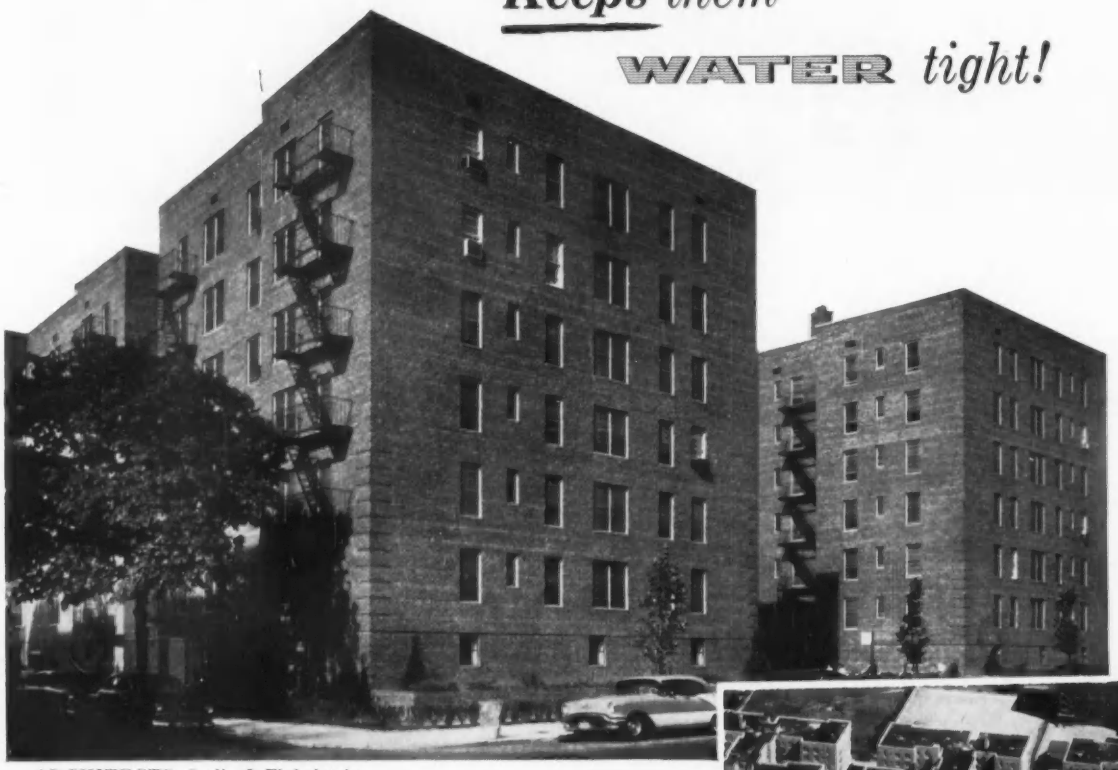

ARCHITECTS: Seelig & Finkelstein

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with A. C. Horn's Hydratite—an integral water repellent admixture for concrete and mortar that really provides long range protection for masonry work.

Hydratite's effectiveness as an integral water repellent is due to its action as a concrete and mortar plasticizer that also minimizes initial shrinkage. The easy working of Hydratite treated concrete and mortar mixes, plus its increased ability to resist shrinkage, makes for tighter concrete and masonry work.

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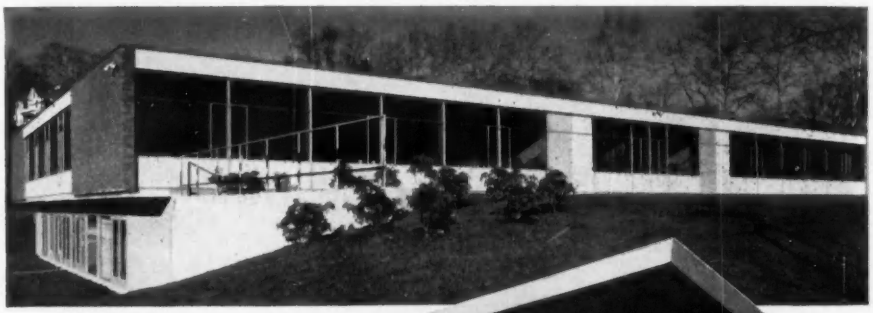

Rehabilitation Center for the Physically Handicapped, Stamford, Conn. Lustragray glass has enough opacity when viewed from the exterior to give a solid, skin wall effect to the building. **Architects:** *Sherwood, Mills and Smith, Stamford, Conn.*

Another **AMERICAN** Lustragray Installation . . . the glass that reduces glare and heat without sacrificing vision

New hospital buildings are being glazed with American Lustragray glass to give added comfort to patients and personnel. Greater eye comfort is realized by eliminating harsh contrasts in brightness levels that result from glare sources. Bodily comfort is increased by reducing solar heat. These are physical benefits achieved through the use of Lustragray glass in windows and doors.

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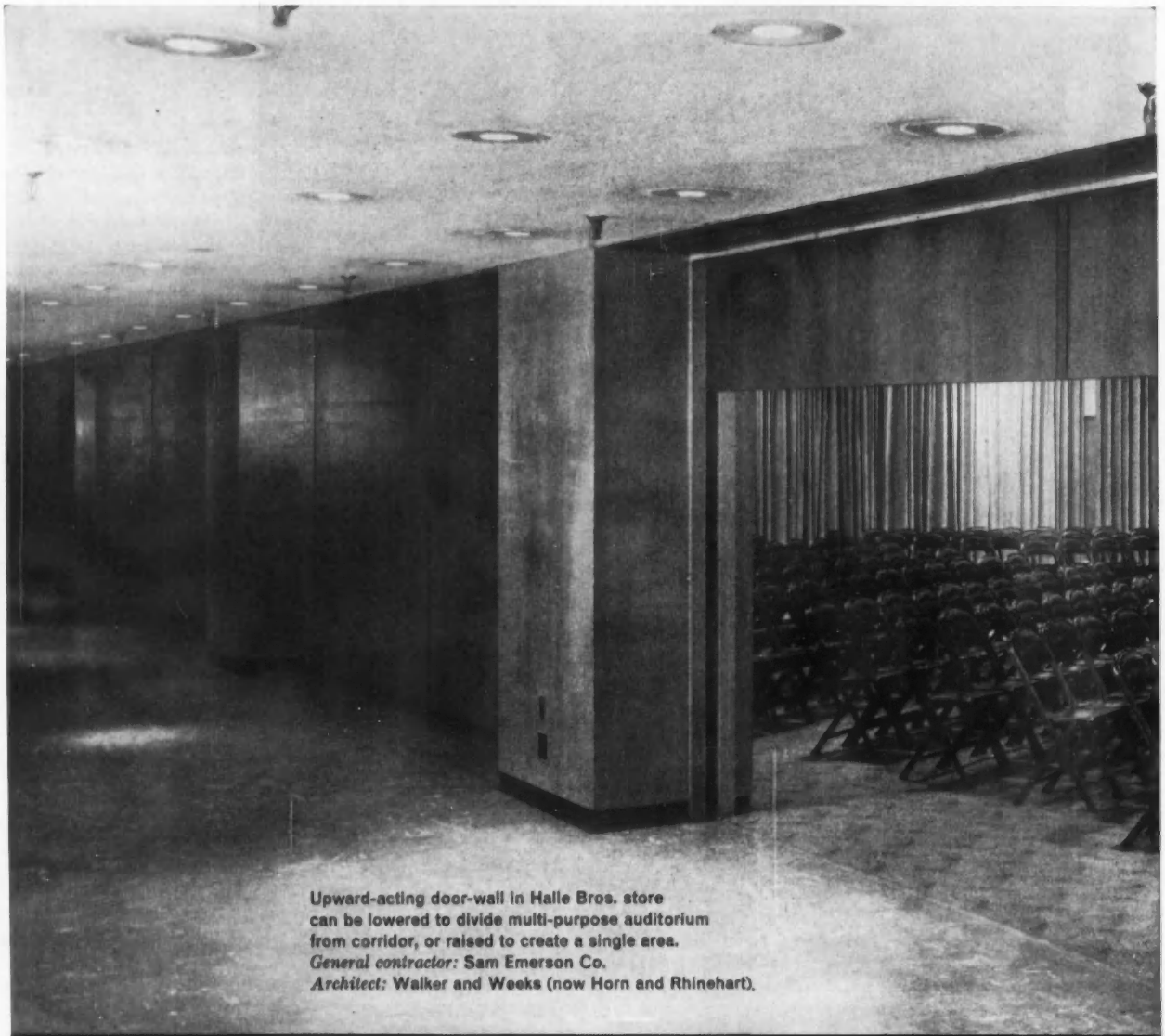
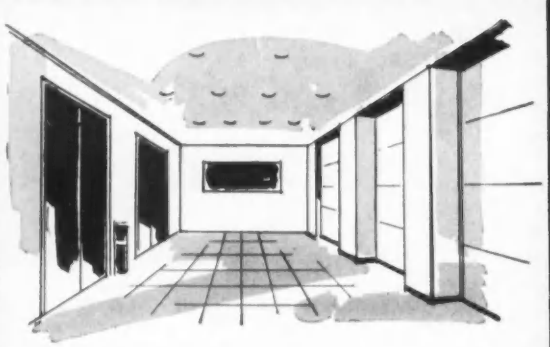
AMERICAN-SAINT GOBAIN CORPORATION is a merger of the former American Window Glass Company, Pittsburgh, Pa., and the former Blue Ridge Glass Corporation, Kingsport, Tenn. (which was a wholly-owned subsidiary of Saint Gobain of Paris, France). American Window Glass Division plants are located in Arnold, Jeannette, Ellwood City, Pa.; Okmulgee, Okla. Blue Ridge Glass Division plant is located in Kingsport, Tenn.



Upward-acting door-wall in Halle Bros. store can be lowered to divide multi-purpose auditorium from corridor, or raised to create a single area.
General contractor: Sam Emerson Co.
Architect: Walker and Weeks (now Horn and Rhinehart).



The "OVERHEAD DOOR," installed in series, can be lowered to let corridor serve as area for elevator traffic. Door designs are available to complement any architectural design or engineering requirement.

Door-wall can be raised to make corridor serve as expanded selling area. Overhead Door Corporation, world's largest maker of upward-acting doors, fabricates its own components.

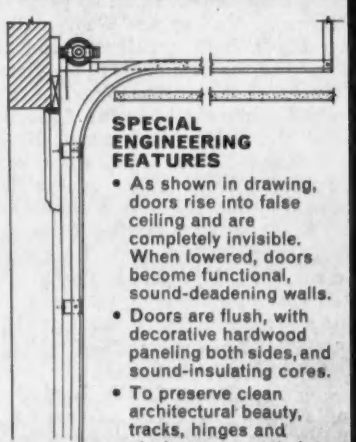
In Halle Bros. department store, Cleveland...

upward-acting door-wall idea lets corridor do extra duty

This special opening problem called for design of a "movable wall" installation . . . to quickly convert a wide corridor into extra space for selling or other store activities. Working with the engineering staff of Overhead Door Corporation, the architect solved this problem with The Original "OVERHEAD DOOR"—providing a series of upward-acting sectional door-walls that rise into a false ceiling.

This disappearing door-wall idea is one of many special door jobs expedited by architects all over the nation, with the help of factory-trained personnel from Overhead Door Corporation and its distributors. In problems requiring doors of any size, shape or weight . . . in wood, aluminum or steel . . . for commercial, industrial or residential use . . . the "OVERHEAD DOOR" specialists follow through with responsible, warranted service.

To save spec writing and drafting time on any special opening problem, see your local distributor of The "OVERHEAD DOOR" (or Sweet's "A" file) for our upward-acting door specification catalog . . . with complete drawings . . . prepared by architect consultants. Learn from your distributor why, *for over 38 years, architects have specified* The "OVERHEAD DOOR" *more than any other brand.*



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- To preserve clean architectural beauty, tracks, hinges and struts are concealed.

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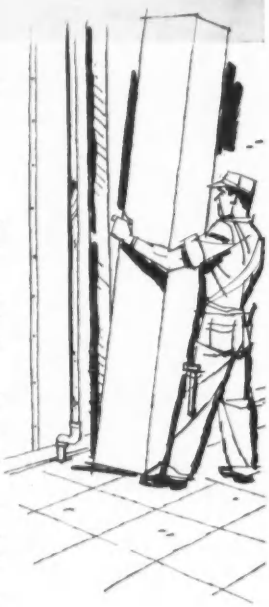

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Chicago 38, Illinois

The Record Reports

4-6 Third Annual Convention, Construction Specifications Institute—Palmer House, Chicago

4-6 "The ACTION Program for the American City," national urban renewal conference co-sponsored by ACTION and Newark Economic Development Committee — Newark

4-8 National Convention (second of three in 1959), American Society of Civil Engineers—Cleveland

13ff "Recent Sculpture, U.S.A." exhibition; through August 16—Museum of Modern Art, New York

14 Industrial Conference, Society of Industrial Realtors—Pittsburgh

20-21 Conference on I.E.S. lighting recommendations, conducted by Building Research Institute — Statler-Hilton Hotel, Cleveland

Office Notes

Office Opened

Douglas Honnold, F.A.I.A., John Rex, F.A.I.A., Architects and Associates, announce the opening of their new offices at 9026 Melrose Ave., Los Angeles.

Firm Changes

A. Epstein and Sons, Inc., Engineers, 2011 W. Pershing Rd., Chicago 9, announces the election of Ralph J. Epstein as a vice president. Mr. Epstein has been with the firm since 1934.

Gordon Ferguson and Donald P. Stevens of Ferguson, Stevens & Associates, Architects-Engineers, announce the addition of two partners, Robert G. Mallory and George Clayton Pearl, both architects, and the change of the firm name to Ferguson, Stevens, Mallory and Pearl, Architects-Engineers. Address: 115 Amherst Dr., S.E., Albuquerque, N. M.

Hartman-Strass, Inc., Consulting Engineers, is the name of the firm formed by the association of the Jerry Donohue Engineering Company, Sheboygan, Wis., and Robert J. Strass, Inc., Milwaukee. The principals are Robert J. Strass, president, and Bruno J. Hartman, executive vice president. Main office: 225 E. Michigan St., Milwaukee.

Magney, Setter, Leach, Lindstrom and Erickson, Inc., is the new name of the firm formerly known as Magney, Tusler and Setter. Principals are John R. Magney, Donald P. Setter,

continued on page 308

ANOTHER PRESTRESSED CONCRETE STRUCTURE

Prestressed Concrete Members:
Sixty prestressed girders 27 in. x 25 ft long.
Ten prestressed spandrel beams 52½ in. x 81 ft long.
Ninety prestressed roof beams 32 in. x 81 ft long.
Nine prestressed canopy beams 32 in. x 41 ft long.
Sixty-seven prestressed double-tee panels 20 ft long.

Architects & Consulting Engineers:
Baskervill & Son, Hankins & Anderson
Richmond, Virginia
Architect Consultant to the Owner:
Ulrich Franzen, New York City
Prestressed Concrete Fabricator:
Concrete Structures, Inc., Richmond, Virginia

Architect H. C. Baskerville Tells You Why Philip Morris Inc. "Called For" PRESTRESSED CONCRETE For New, Richmond, Virginia Factory-Warehouse

"Meeting," and we quote Mr. Baskerville "a rigid and severely limited time schedule" was one of the primary reasons for the selection of prestressed concrete for the new Philip Morris Inc. factory-warehouse. Located in Richmond, Virginia, the structure provides a total of 100,000 sq ft of storage space for packaging and other materials used in the manufacture of cigarettes.

Structural Engineer Robert H. Deaderick and Job Captain Richard H. Cardwell looking over plans for the Philip Morris warehouse.

Warehouse dimensions are 250 ft by 405 ft with a 12 ft loading dock, and are divided into 5 bays each 81 ft by 250 ft Basic design requirements for the structure were (and again we quote the architect) ". . . eighty foot clear spans, sixteen-foot clear headroom, fire-resistant and sprinkler construction, concentrated supports to afford flexibility," and the aforementioned need for construction speed. In summing up, Mr Baskerville adds, "after careful comparison of a number of framing systems, prestressed concrete proved to be the most *economical* system meeting all requirements." We have taken the understandable liberty of emphasizing *economical*.

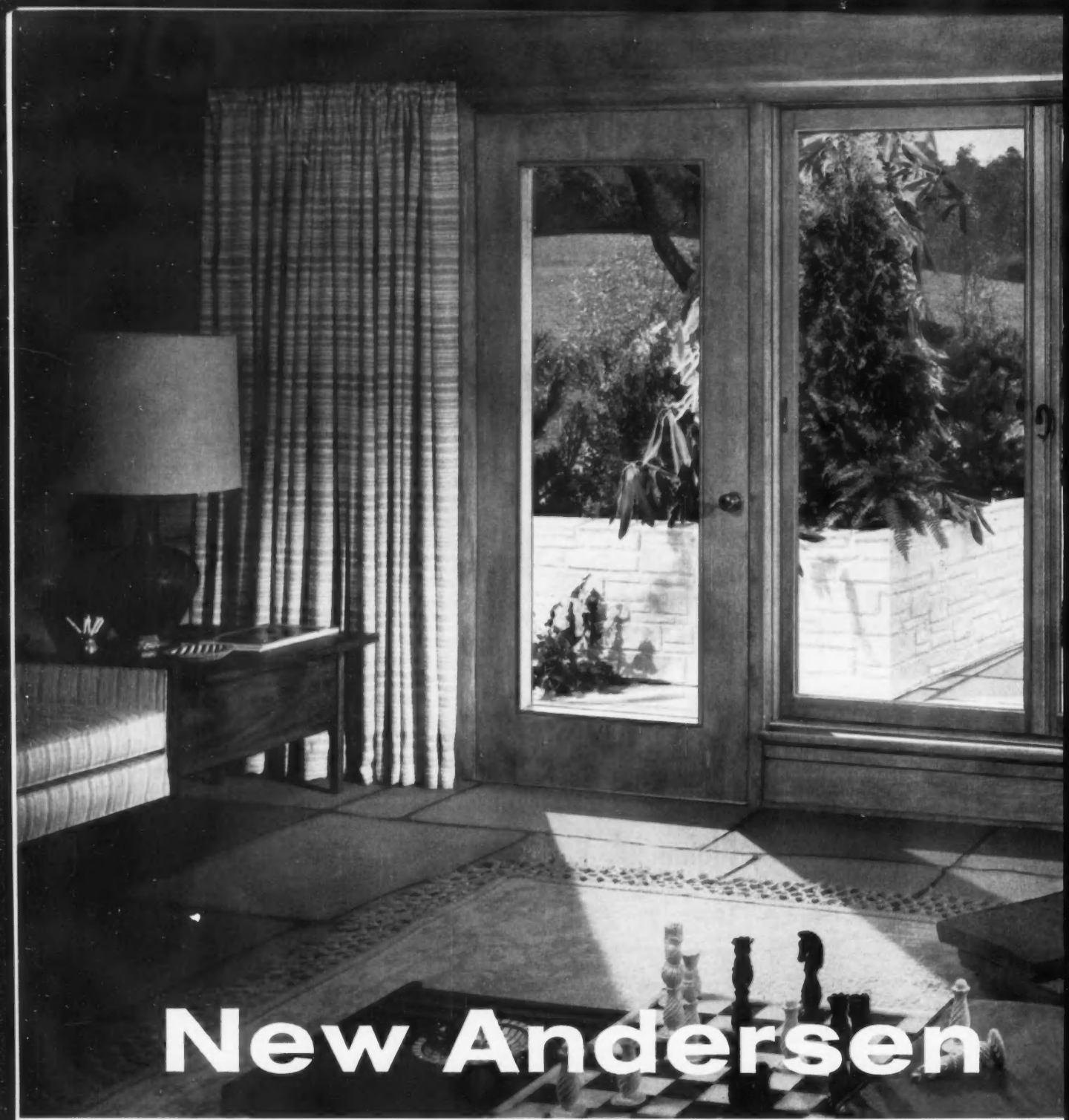
As prestressed concrete construction increases throughout the country, we at Roebling find that architects, engineers and builders have their own *emphatic* reasons for choosing it. In every case, many of the same reasons are given; flexibility, construction speed, low maintenance, insurance benefits, economy, design and aesthetic adaptability; though naturally one quality is more important than another in specific examples.

In any case, and for any reason, the prestressed method of construction certainly deserves your attention. The Construction Materials Division of John A. Roebling's Sons Corporation, Trenton 2, New Jersey, has long been active in bringing the benefits of the prestressed method to architects and builders everywhere. We are in a position, therefore, to share with you data and information we have accumulated on all phases of prestressed concrete. Any inquiry bearing on any part of this remarkable subject will be answered promptly and fully.

ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

CONSULT ROEBLING . . . First in U. S. with prestressing and tensioning elements



Adds striking natural beauty; more trouble-free, weathertight than metal sliding door units

Here's a wonderful, new WINDOWALL. The new Andersen Patio Wall consists of two handsome Andersen Gliding Windows plus matching door. It provides the ultimate in indoor-outdoor living. It simplifies and solves many fenestration problems. It costs *less* than metal sliding doors of acceptable quality.

● **Trouble-free, weathertight!** Andersen up-off-the-floor design and use of wood, plastics, steel and aluminum where each is best assures lifetime, trouble-free operation. Andersen Gliders open easily, close in the same plane. Lock pressure-tight to seal out drafts, rain, dirt, dust. Wood sash and frames provide natural insulation of wood—up to 1800 times more effective than metal sash and frames in stopping conduction of heat, cold.

● **Hinged—not sliding—door!** Practical. Convenient. No floor level tracks to become damaged or collect dirt and water. Safer, more secure, less breakage with no glass at floor line. Added protection against infiltration of rain, dust.

● **Baseboard convenience!** You can detail heating and electrical outlets under windows. Baseboard also protects against rain or piled up snow. Gives floor level insulation and comfort. Eliminates floor level breakage of glass.

● **Natural beauty!** Fashioned in wood, new Andersen Patio Wall adds character, depth of shadow line . . . natural warmth and beauty instead of a blank metal look. Sash and frames can be easily painted or stained to blend perfectly with interior. They can't rust, pit, corrode. Andersen Penta-treating protects permanently against rot, termites, decay.

For complete information on New Andersen Patio Wall see your Sweet's File, phone your lumber and millwork dealer, or write for Detail Catalog or Tracing Detail File to: Andersen Corporation, Bayport, Minnesota.

AW Andersen *Windowalls*

TRADEMARK OF ANDERSEN CORPORATION

ANDERSEN CORPORATION • BAYPORT, MINNESOTA

New safe way to lock pairs of swinging glass doors
With the Double Protection and Exit Safety of the
ADAMS-RITE
*MS® 1851-II
TWO-WAY LOCK

Now ONE lock does the job of TWO!

Engineered exclusively by Adams-Rite for the control of main and obvious entrance pairs of doors for places of public assemblage, the MS 1851-II Two-Way Lock adds new strength to the narrow stile installation and assures exit freedom. With one 360° turn of the management-controlled key both a lock and threshold bolt are thrown or retracted, simultaneously locking or unlocking both doors... insuring that the entire opening is usable during business hours. The key can be removed only in the locked or unlocked position. Holding special interest for insurance companies and organizations whose professional concern is public safety, this purposefully designed deadlock provides the world's safest and most advanced protection.

The MS 1851-II which **eliminates locking hardware in the inactive door** is a combination of the Basic MS 1851 Lock and No. 4015 Two-Way Converter. The 4015 may be stocked separately to convert any MS 1851 series lock into an MS 1851-II.

For additional information and specifications, write

ADAMS-RITE
Manufacturing Company
Dept. 49, 540 West Chevy Chase Drive, Glendale 4, Calif.

** The Maximum Security Principle*

More than a slogan, **MAXIMUM SECURITY,** is the exclusive basic principle that governs the design and manufacture of Adams-Rite locking devices that are, in fact, stronger than the doors and windows in which they are installed, providing the ultimate in security and safety.

Quality Hardware for Over Half a Century

Adams-Rite also produces over 90% of all door hardware for the airframe industry.

IDEAS...

AND ARMCO STEEL BUILDINGS

Modular Panel Wall Construction With Complete Freedom of Door and Window Placement Makes Armco Buildings The Practical Partner for Your Imagination

Your ideas and Armco Steel Buildings can be ideal partners. The unique STEELOX® Panel wall construction (16" module) of Armco Steel Buildings gives you the flexibility you need to best serve your client. Doors and windows can be located exactly where they are needed. Just as important, there's practically no limit to the sizes and types of openings that can be accommodated. You'll find flexibility, too, in selecting the Armco Building you need. There's no limit to total width or length. Clear spans range up to 100 feet.

See our full color catalog in Sweets' Architectural File. For details on a specific building, write us. Armco Drainage & Metal Products, Inc., 5709 Curtis Street, Middletown, Ohio.

New steels are born at Armco

ARMCO DRAINAGE & METAL PRODUCTS

Subsidiary of ARMCO STEEL CORPORATION

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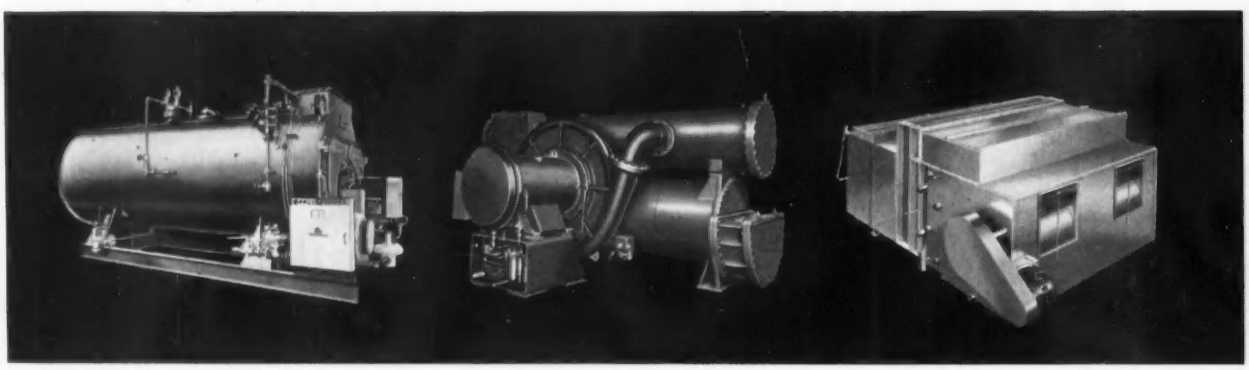
To serve you better we created a new division

Now you can benefit from the combined engineering backgrounds and product lines of three American-Standard* divisions—American Blower, Ross Heat Exchanger, and Kewanee Boiler—consolidated into *one* organization!

Here is *one-source* responsibility for quality and performance in equipment that is designed, engineered, and manufactured to work together. You draw from a product line unsurpassed in the industry . . . one that encompasses air conditioning, heating, ventilating, heat transfer, dust collection, and fluid drives.

There are engineer-staffed offices in all principal cities to work with architects, consulting engineers, and contractors with equipment selection and on-the-job problems. Send for Bulletin B-5829 for facts about the new: American-Standard Industrial Division, Detroit 32, Michigan. In Canada: American-Standard Products (Canada) Limited, Toronto, Ontario.



Firebox, scotchtype steel boilers and package units for heat, power, steam.

Centrifugal refrigerating machines for central-station air-conditioning systems.

Central-station air-conditioning units for public buildings, industrial plants.

ONE CALL FOR ALL!

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INDUSTRIAL DIVISION

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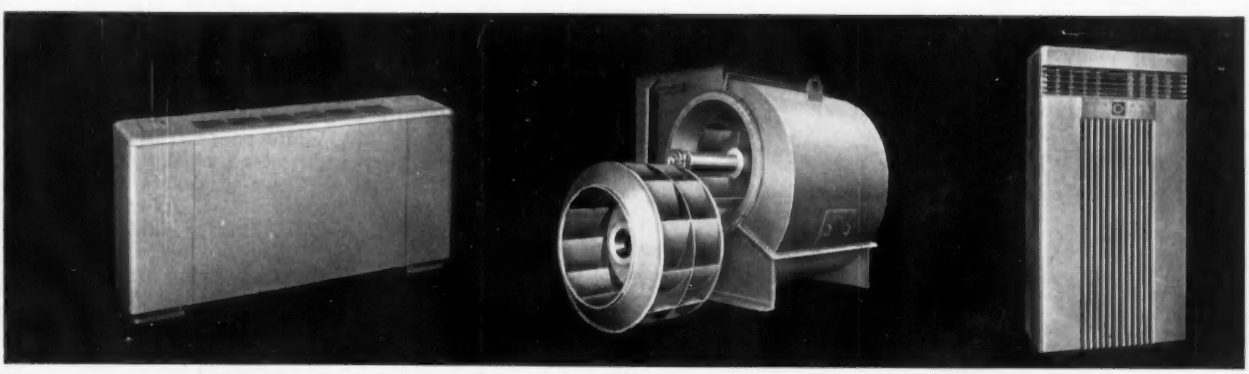

Fancoil units for cooling and heating individual rooms in multi-room structures.

Heavy-duty centrifugal fans for high pressure air conditioning or ventilating needs.

Packaged commercial air conditioners, air or water cooled types, 3 to 20 tons.

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At Dick Graves' Million Dollar Nugget Casino–Near Reno

BRADLEY DUO WASHFOUNTAINS

Foot control, no faucets to touch, always sanitary.

Dick Graves writes; "I felt it necessary to write you 'Congratulations' on having such an exceptional product as these Bradley Duos. There are twelve of these units installed in both public and employee rest rooms and they have become quite a conversational piece. Not a day goes by but what our customers don't mention how impressed they are with their beauty and ease of operation.

"The new Nugget is one of the largest Casinos in Nevada with three unusual restaurants, two large bars, banquet rooms and a children's theatre. We have over 350 employees and approximately 5000 patrons every day. With this heavy traffic, our new Washfountains have endured the 'acid' test. The appearance of the Duos are a credit to any establishment.

"We want to express out thanks to your company for a wonderful product and to J. F. Davy Plumbing Company in Los Angeles for intsoducing us to Bradley Duo Washfountains."

Bradley Duo Washfountains are the most sanitary wash fixtures available. Tempered water from the sprayhead serves one or two persons at a touch of the foot treadle. And the self-flushing bowl prevents collection of unsightly leftover water.

Duos in vitreous enamel (6 colors) or stainless steel are now widely used in restaurants, offices, schools, institutions, industry—wherever there are hands to wash. Write for Bulletin K-1204 for complete data.

BRADLEY WASHFOUNTAIN CO.
2227 West Michigan St.
Milwaukee 1, Wisconsin

Write for Bulletin K-1204

BRADLEY Duo Washfountains

Distributed by Plumbing Wholesalers

The Record Reports

Stowell D. Leach, John Lindstrom, and Hugo Erickson. Wilbur H. Tusler has retired as a principal but continues as a consultant. Address: 303 Roanoke Bldg., Minneapolis.

Mayer, Whittlesey & Glass announces that William J. Conklin is now an associate partner. Address: 31 Union Sq., New York 3.

Charles Nagel & Associates, Consulting Engineers, announces the formation of the firm of Charles Nagel & Associates, Inc., Architects & Engineers. Architects are T. J. Bischoff and Don E. Knoblauch. Engineers are Gilbert S. Feldman, Wm. Marshall, Chas. A. Nagel, and Mr. Knoblauch. Address: 1615 Underwood Ave., Milwaukee 13.

Frank C. Shattuck Associates, Inc., Architects, announces the changing of its corporate name to Frank C. Shattuck, M. F. Siewert and Associates, Inc., Architects. Address: 174 E. North Water St., Neenah, Wis.

Summer & Lundquist, Inc., Architects, is the new name of the firm formerly known as John E. Summer & Associates, Inc. Principals are John E. Summer, A.I.A., and George C. Lundquist, A.I.A. Address: 7-17th St., N.E., Atlanta 9.

Frank M. Valdez, A.I.A., Architects-Engineers, announces the appointment of Arthur A. Treut, industrial designer, as associate director of residential and subdivision planning and home consultant services. Address: 1818 San Pedro Ave., San Antonio, Texas.

Robert F. White and Associates, Landscape Architects and Planning Consultants, announces the resignation of Mr. White as professor of landscape architecture at the A. & M. College of Texas to devote full time to private practice. Address: 336-B Jersey St., College Station, Texas.

The consulting engineering firm of Woodward, Clyde, Sherard & Associates, 1150-28th St., Oakland, Cal., announces the recent opening of two East Coast offices. One, at 680 Fifth Ave., New York, is headed by James L. Sherard. The other, at 98 Greenwood Ave., Montclair, N. J., is under David M. Greer. The firm has also recently opened an office at 3467 Kurtz St., San Diego, with Douglas Morehouse in charge.

New Address

Kelly & Gruzen, Architects-Engineers, 10 Columbus Circle, New York 19.

more news on page 312

GEORGIA STATE CAPITOL DOME has been rebuilt with Monel roofing. Monel alloy was specified for ease of installation, corrosion-resistance and low maintenance . . . *for a roof as permanent as the building.*

Why Georgia is roofing its most important building with Monel...

Specially designed 18-inch Monel "shingles" roof capitol's ceramic dome. For unyielding grip, "shingles" are attached with Monel Anchorfast* nails. Monel* nickel-copper alloy resists corrosion and wear over the years, endures for the life of a building† with minimum maintenance.

Detailed cornices, downspouts and gutters like these are easily fabricated** in Monel alloy. In addition, Monel alloy has a coefficient of expansion almost identical with concrete. It works *with* adjacent masonry, resists buckling . . . virtually eliminates destructive cracking and leakage.

Welded clerestory window mouldings are made of eight pre-formed Monel sections. Monel alloy welds easily, solders readily. Write for case history information on Monel roofing. Ask for booklet, 148-B.

The International Nickel Company, Inc.

67 Wall Street INCO New York 5, N. Y.

*Registered Trademark, The International Nickel Company, Inc.

†Architect, A. Thomas Bradbury & Associates, Atlanta, Georgia

**Sheet Metal Contractor, R. F. Knox Company, Atlanta, Georgia

MONEL ROOFING

FOR THE LIFE OF THE BUILDING

REPUBLIC HIGH STRENGTH REINFORCING BARS

Reduce column size, save floor space, permit design stress of 30,000 PSI

REPUBLIC HIGH STRENGTH REINFORCING BARS MEET ASTM SPECIFICATION A-431-58T

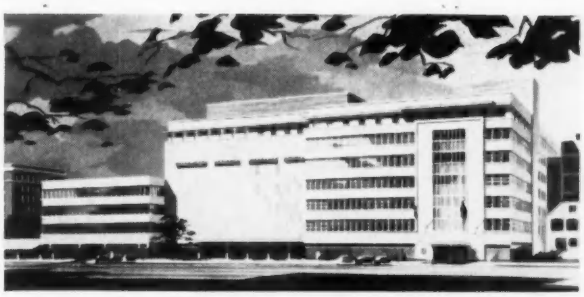
. . . "High Strength Billet Steel Bars for Concrete Reinforcement". Material used in bar fabrication is of a special high strength grade intended for use in concrete structures designed to require steel reinforcement with a yield point of 75,000 pounds per square inch.

These advantages were obtained by employing large size, Nos. 14S and 18S Republic High Strength Concrete Reinforcing Bars for column verticals in the Washington National Insurance Company Building, Evanston, Illinois.

The building has unusually large bays, approximately 27′ by 27′ with flat slab reinforced floors 9″ and 10″ thick. While the building is only seven stories, and the floor live load 100# per square foot, heavy loads must be supported by the columns because of the large bays.

Decision by the Architects-Engineers, Graham, Anderson, Probst & White, to use high strength reinforcing bars was based on utility rather than on initial economy.

For example, a first story column with conventional steel verticals consisting of two concentric spirals contain-



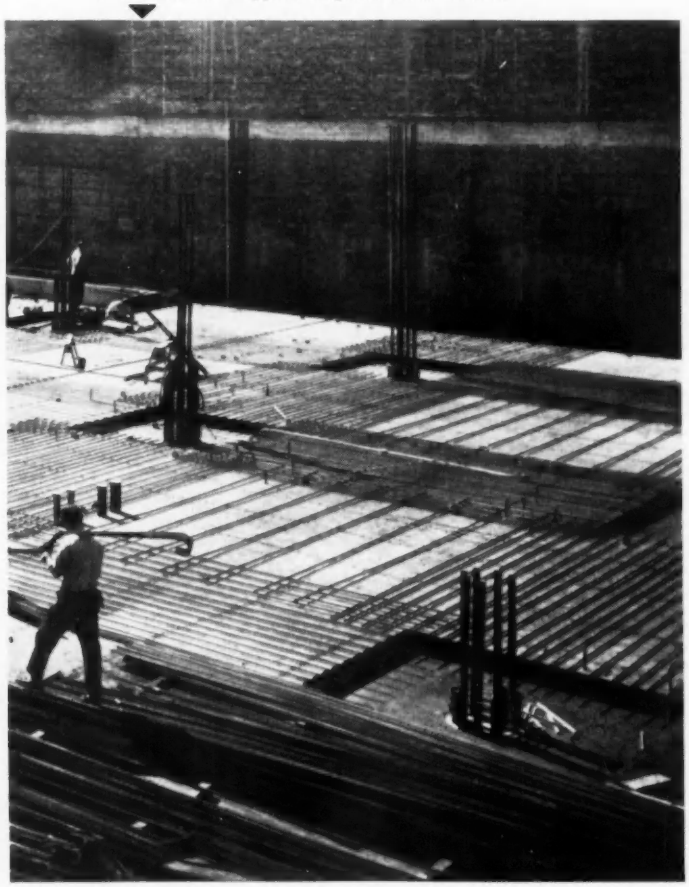
Washington National Insurance Company Building, Evanston, Illinois. Graham, Anderson, Probst & White, Architects-Engineers, Chicago. Norman F. Brunkow, Chief Structural Engineer. A. L. Jackson Company, General Contractor, Chicago. Gateway Erectors, Inc., Steel Erectors, Chicago.

ing 22 No. 11 bars, limited to a design stress of 20,000 PSI, would have been 32″ in diameter. The same column using 11 No. 18S butt-welded, high strength bars, with a possible design stress of 30,000 PSI, measures 26″ in diameter—a saving in floor space of approximately 2 sq. ft. per column.

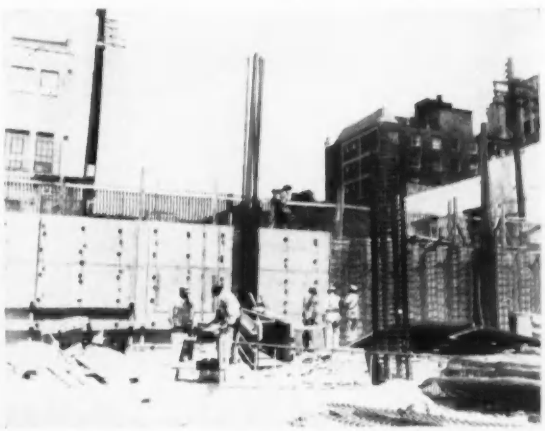
Republic High Strength Reinforcing Bars provide a minimum yield point of 75,000 pounds per square inch and meet the new ASTM Specification A-431-58T.

The high strength bars are rolled from new billet steel only, in all standard sizes including, 14S (1½″ square equivalent) and 18S (2″ square equivalent). Bars can be specified to any length up to 60 feet. All splices are field welded. Mail the coupon today for full facts.

Progress photo below shows the setting of reinforcing steel in the second floor and indicates the staggered heights of column verticals.



NO. 18S HIGH STRENGTH REINFORCING BARS used in column verticals are electrically butt-welded in basement story adjacent to steel sheeting. To accomplish the weld, the lower bar is furnished with a square cut end and the top bar is beveled at 45 degrees from each side to form a chisel end. Clamps are used to hold bars in alignment.



This photo shows first and second story column verticals extending above the basement floor after having been butt-welded to the dowels in caisson tops. Bars are No. 18S high strength types furnished by Republic Steel.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL

REPUBLIC STEEL CORPORATION
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1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send more information on Republic High Strength Concrete Reinforcing Bars.

Name_____ Title_____

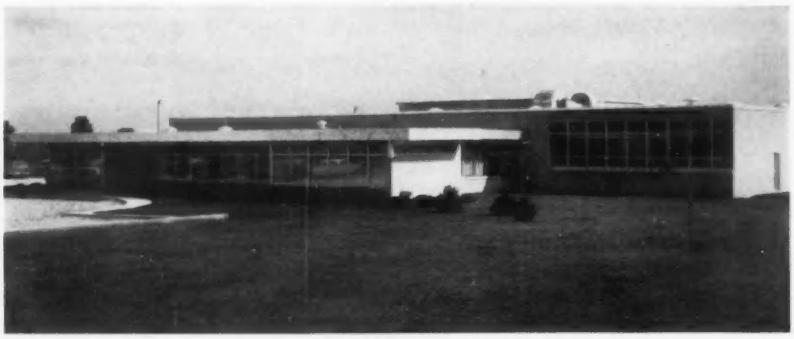
Company_____

Address_____

City_____ Zone_____ State_____

Economical Construction Methods Employed in Hardware Factory

The new factory for the John Sterling Corporation in Illinois near the Wisconsin border is a 36,000-sq-ft structure built on a 4-ft module. The clients, manufacturers of builders' hardware, specified a building economical to construct, easy to maintain, and expandable to several times its present size. Large, clear floor areas allowing a flexible production layout also were necessary. The architects were Derald M. West & Associates, Genoa City, Wis.; the general contractor was Howard Lindvig of the same city.



The minimum clear span in assembly and storage areas is 36 ft. The crane bay, however, has a 52-ft minimum span. The architects decided on 8-in. round steel columns, laminated wood beams, and a four-by-six tongue and groove solid wood deck. The structure supports a five-ton traveling crane.

The walls are light-weight concrete block in a stacked masonry pattern; in the lobby area (shown) some blocks are set out slightly for variety. The office area has an acoustical ceiling suspended below the wood deck, with air conditioning and other ducts in between. The block masonry walls are painted two-tone green in the factory area and in warm colors in the offices. The architects say basic construction economies made possible more expensive mechanical, lighting, and plumbing equipment, floor finishes, and window treatment.

more news on page 318

THE SHELVING OF A THOUSAND USES!

This inexpensive steel rod shelving meets any requirement, assembles quickly, (with no special tools) last a lifetime!

Erecta Shelf consists of uprights and shelves of strong steel rods, notched to friction fit tightly and lock rigidly in place. No nuts and bolts or special tools required! Assembly takes only minutes and new arrangements or additions may be made just as quickly. Shelves can be adjusted to accommodate items in all sizes, shapes and weights up to 1000 lbs. per shelf!

Durable, lightweight, amazingly strong—designed to meet your every requirement, Erecta-Shelf is stocked for immediate shipment!

Write today for details!

ERECTA SHELF

a quality product of

METROPOLITAN WIRE GOODS CORP.

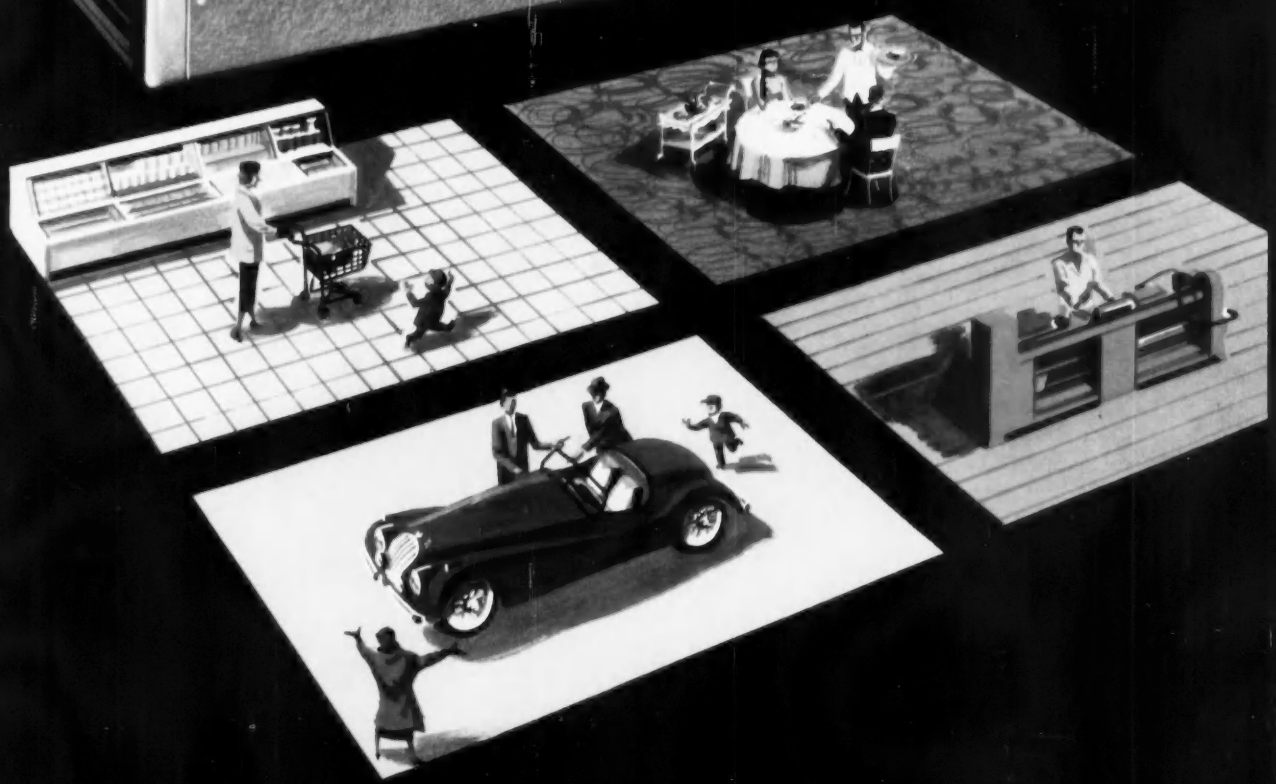
N. WASHINGTON ST. and GEORGE AVENUE
WILKES-BARRE, PA.

the quality tells . . . the quality sells

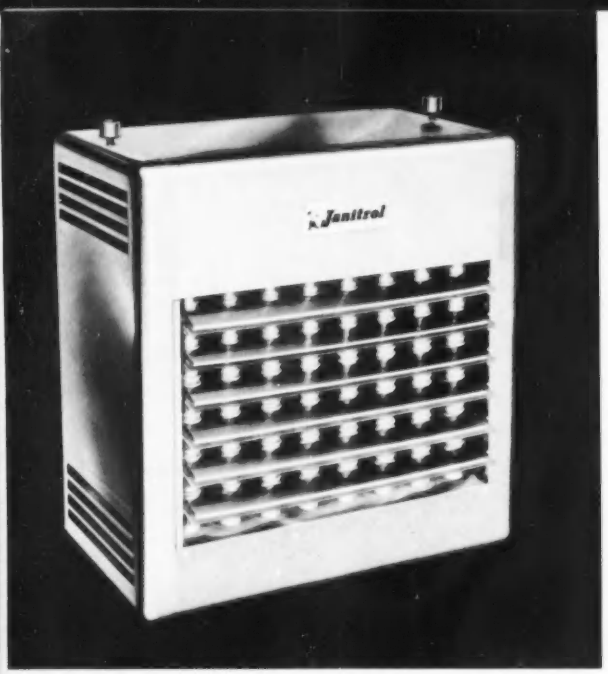
new

JANITROL

UNIT HEATERS



provide fast, clean heat for a variety of applications



Sell and Grow with JANITROL

Gas-fired Commercial and Industrial Heating Equipment

VERSATILE NEW JANITROL UNIT HEATERS

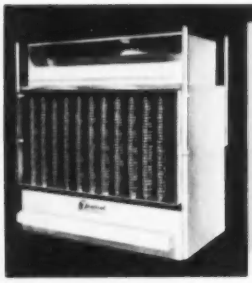
Remember this about Janitrol Unit Heaters: their versatility and efficiency, combined with low cost, means you can use them to advantage for most every commercial or industrial building.

They save installation time and labor. They do not need expensive duct work. They are completely automatic. They offer convenient "dual fuel" performance—use natural or LP gas; may be switched from one fuel to the other automatically. And they direct heat *where* needed only *when* it is needed—assure top operating economy.

And remember, too, that no other unit heater can match their record for durability and low maintenance. The exclusive Janitrol Multi-Thermex heat exchanger is so enduring that replacements for any cause have been less than ¼ of 1% in over two million heat exchanger tubes produced since 1940!

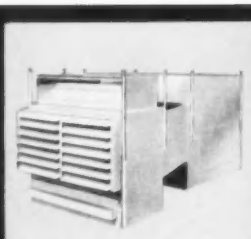
Dependability and economy—these are benefits that only time and experience can bring. Be sure Janitrol Unit Heaters are the choice for your next job.

Fill every commercial and industrial heating need from JANITROL'S broad line . . .



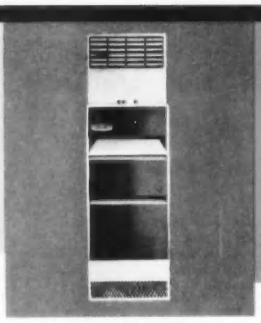
GAS-FIRED DUCT FURNACES

Engineered for installation in a duct where air is circulated by a separate blower. Especially adaptable for use in combination with cooling. Two sizes: 200,000 and 300,000 Btu/hr. input—may be combined to provide capacity from 200,000 Btu/hr. up, in increments of 100,000 Btu/hr. input. Five sizes, from 85,000 to 225,000 Btu/hr. in Duct 55 models.



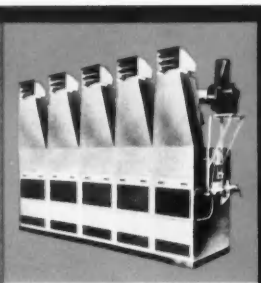
BLOWER-TYPE UNIT HEATER

Allows air delivery from greater heights and against greater static pressures. Models with exposed or enclosed blowers. A.G.A. approved as low and high static-type blower unit heater for air delivery to duct system up to 1.0 in. W.C. external static. Heat sections factory assembled. Sizes: 300,000, 400,000 and 500,000 Btu/hr. input.



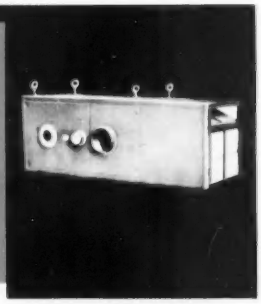
FLOOR-TYPE UNIT HEATER

Cold air drawn from floor level is heated, filtered and discharged horizontally overhead. Quiet, clean, carefree—ideal for offices, restaurants, stores, labs, etc., requiring a compact unit. May also be connected to a duct system. Six sizes: Rated input from 65,000 to 200,000 Btu/hr.



HEAVY DUTY BLOWER HEATERS

For unit heating, central heating and air conditioning. Wide range of standard blowers and motors assures correct air delivery and temperature rise in each application. Factory assembled and tested. Capacities from 250,000 Btu to 1,750,000 Btu/hr. input.



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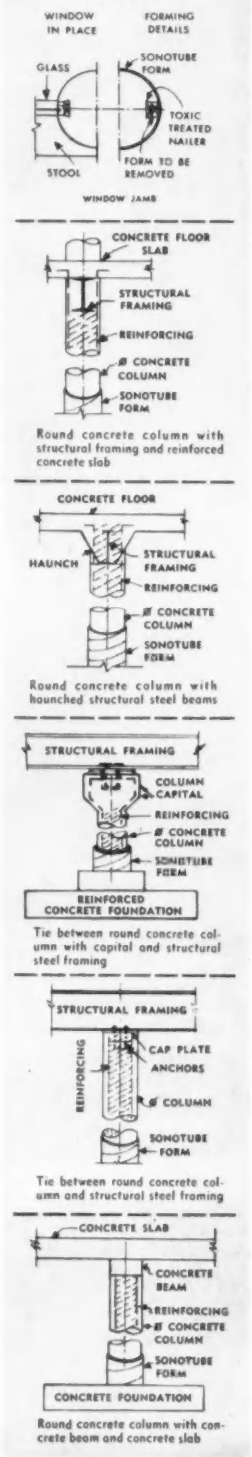
TYPICAL FORMING DETAILS

(not to scale)



specify round concrete columns formed with low-cost

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Dallas Airport Terminal—Love Field, Dallas, Texas—General Contractor: T. C. Bateson—Architect: Broad & Nelson, and Jack Corgan (Photo: Squire Maskins, Dallas)

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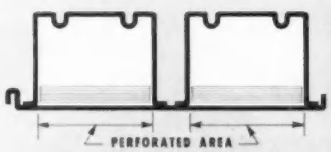
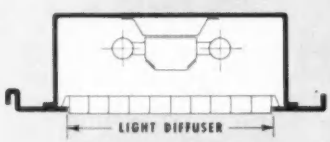
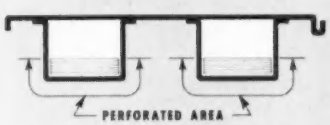


SECTION M2SR (Acoustical)
CEL-BEAM DEPTH 1½", 3", 4½", 6 or 7½"



SECTION M1T (Troffer)
DEPTH 6" or 7½"



SECTION M2 (Acoustical)
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At Left: Cross Section of Long Span M-Deck Combined Roof-Ceiling with Troffer Lighting.

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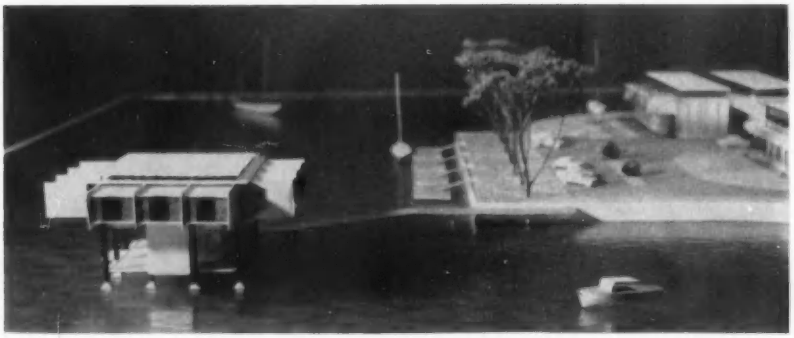
N.I.A.E. Thesis Winner Designs Boat Yard for Yacht Builder

Winner of the National Institute for Architectural Education's 1958 Thesis Award was David Bruce Falconer for "A Boat Yard for Stamford." Mr. Falconer, who received his B.Arch. degree from Yale last year, is now associated with Victor Christ-Janer.

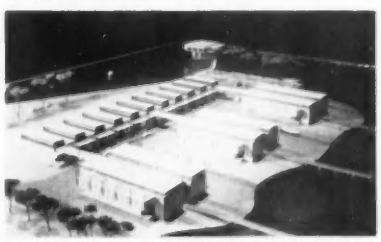
The jury consisted of William F. R. Ballard, Giorgio Cavaglieri, Abraham W. Geller, José A. Fernandez, Sidney L. Katz, and Jedd S. Reisner. They chose the boat yard from ten entries from Carnegie Tech, Columbia, Rice, Illinois, Nebraska, and Yale.



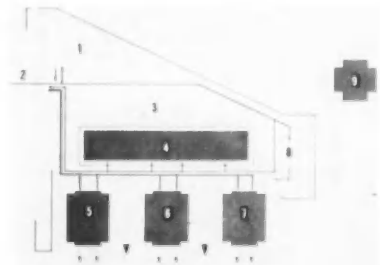
Mr. Falconer's project is a theoretical yard for an actual firm, the Luders Marine Construction Co., Stamford, Conn. The yard would be capable of building, storing, and repairing wood, steel, or plastic boats up to 200 ft in length. The idea is that such a yard might help a yacht-building firm meet foreign competition in that field and also branch out to government work and commercial fishing boats.

The plan below shows the layout, with the long shop building and a separate boat house for each type of construction. The cantilevered office and sales building, seen in foreground in top photo, may be approached on foot or by boat.

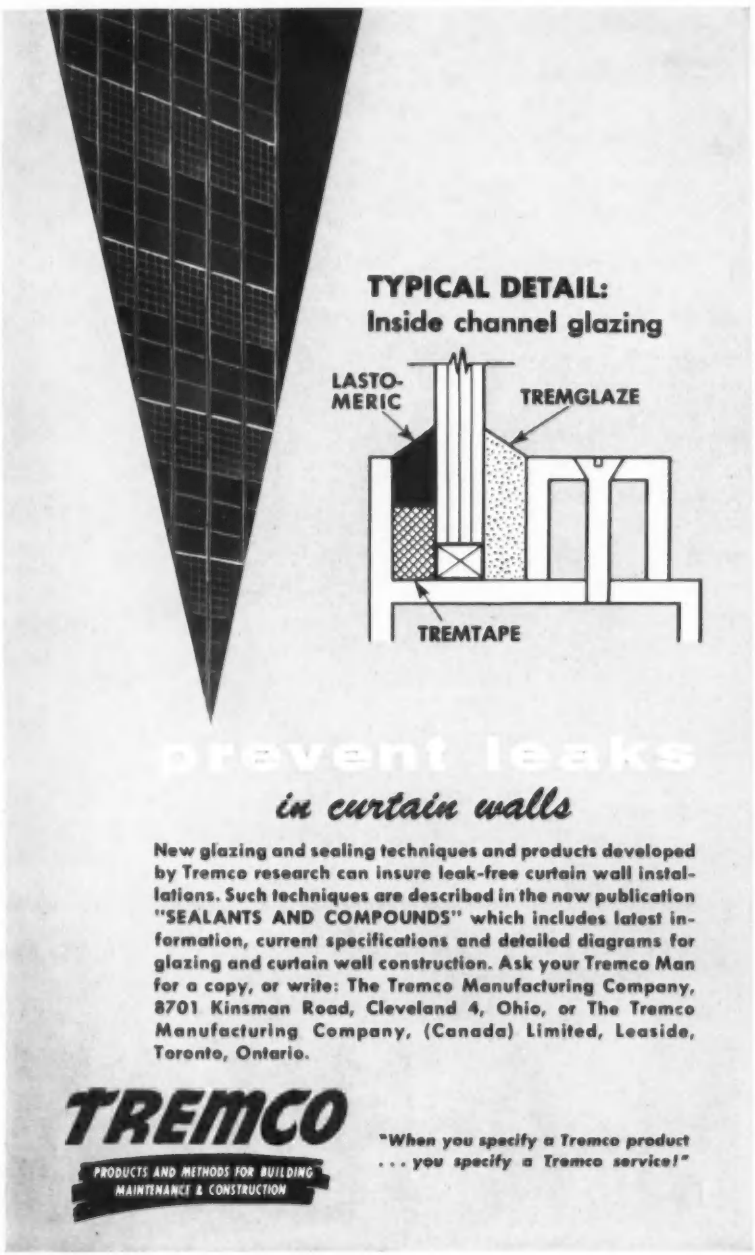
The jury report, prepared by Mr. Geller, noted that the jurors were impressed by "the designer's ability to take standard economical structural components and so relate them as to result in a very stimulating architectural solution."



1. Yard Parking; 2. Gatehouse; 3. Outdoor boat storage and repair; 4. Shops; 5. Steel; 6. Plastic; 7. Wood; 8. Office parking; 9. Office



more news on page 326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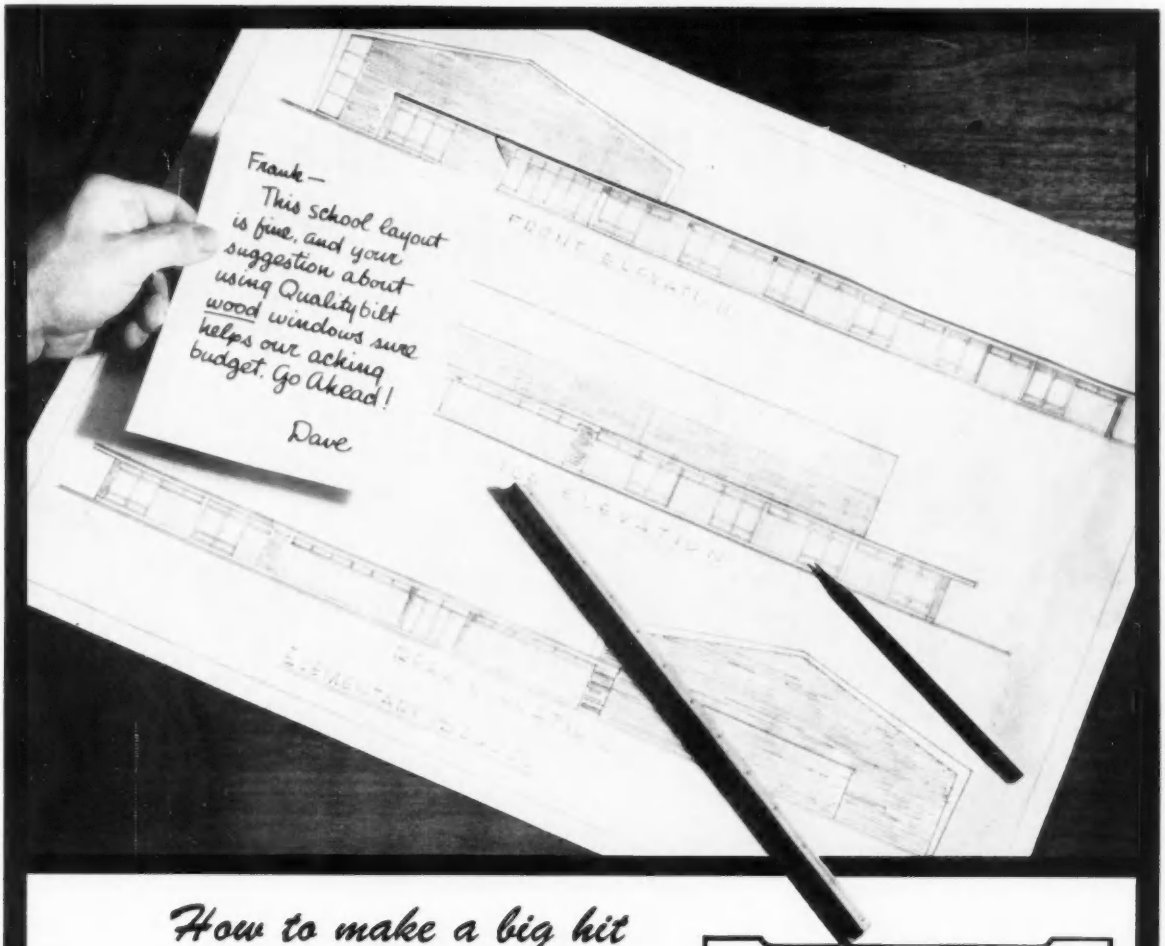
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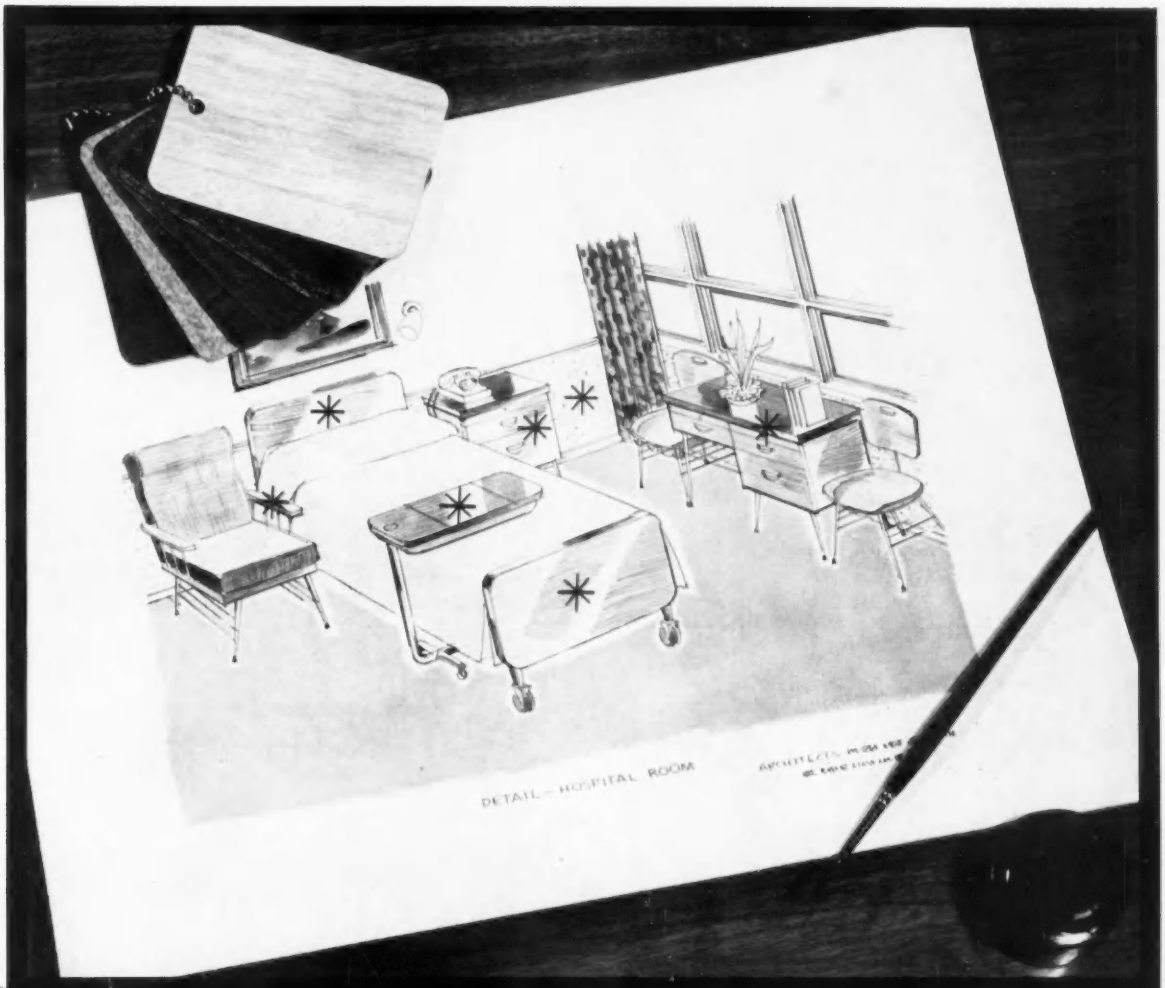

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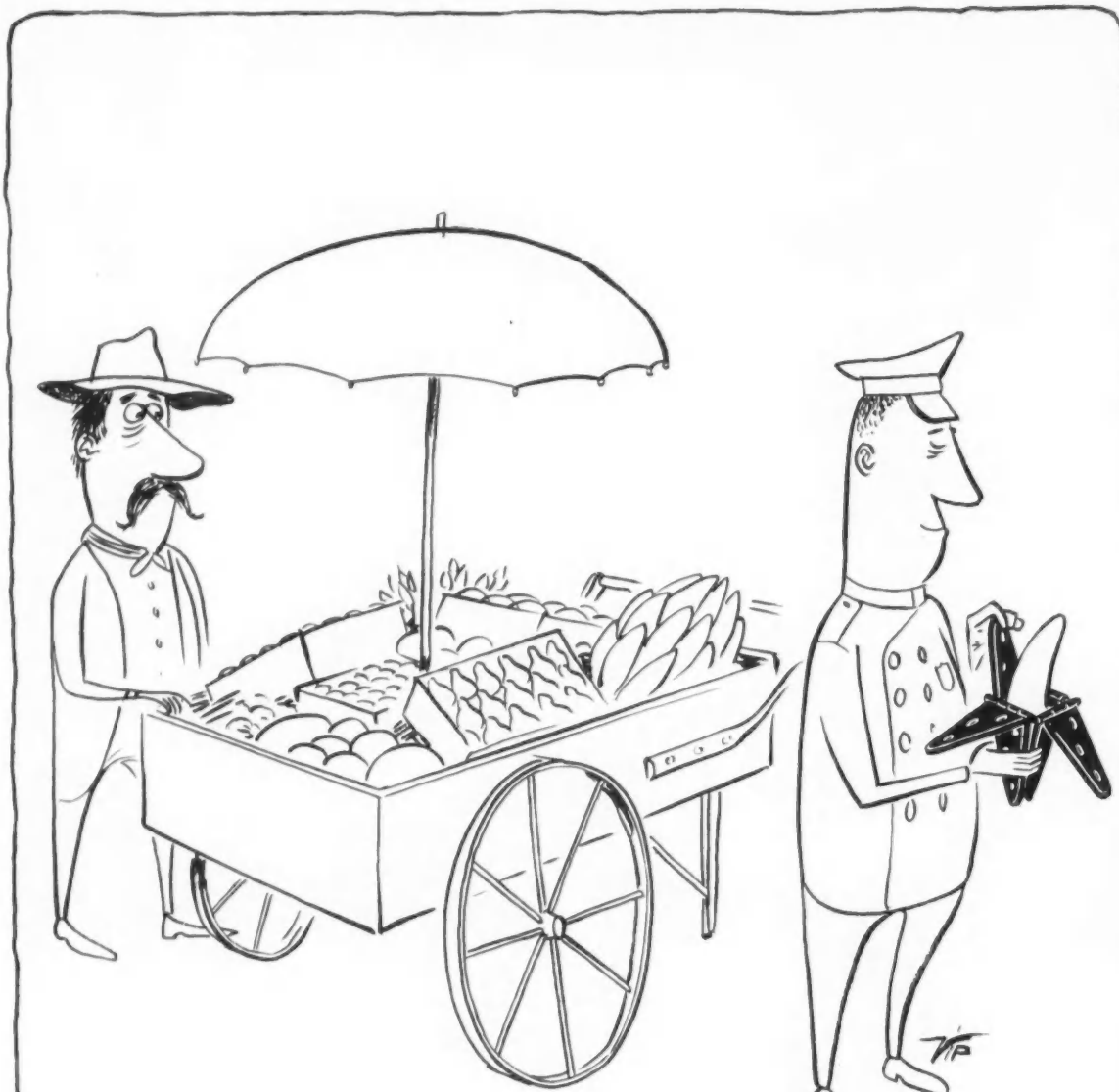

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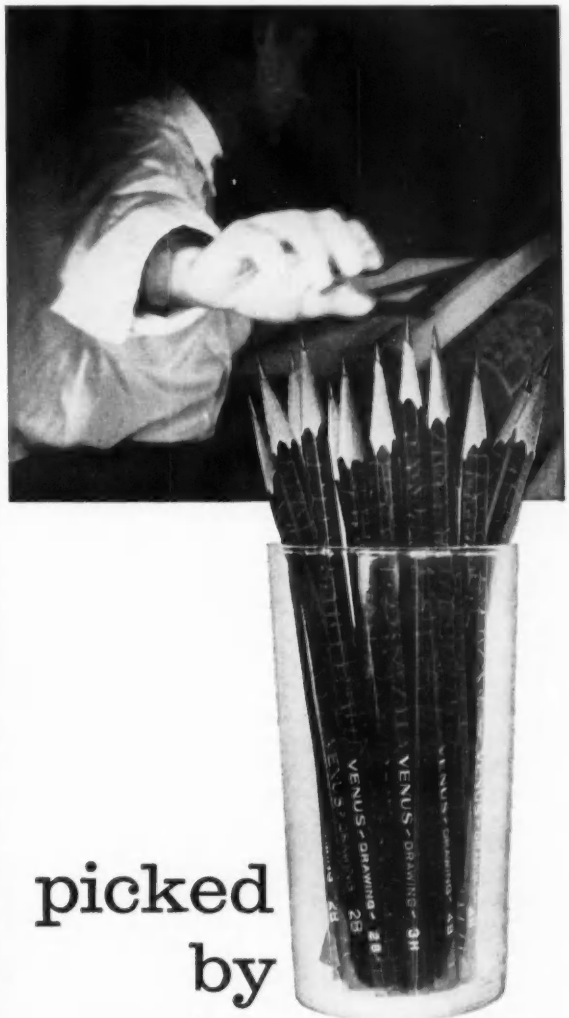

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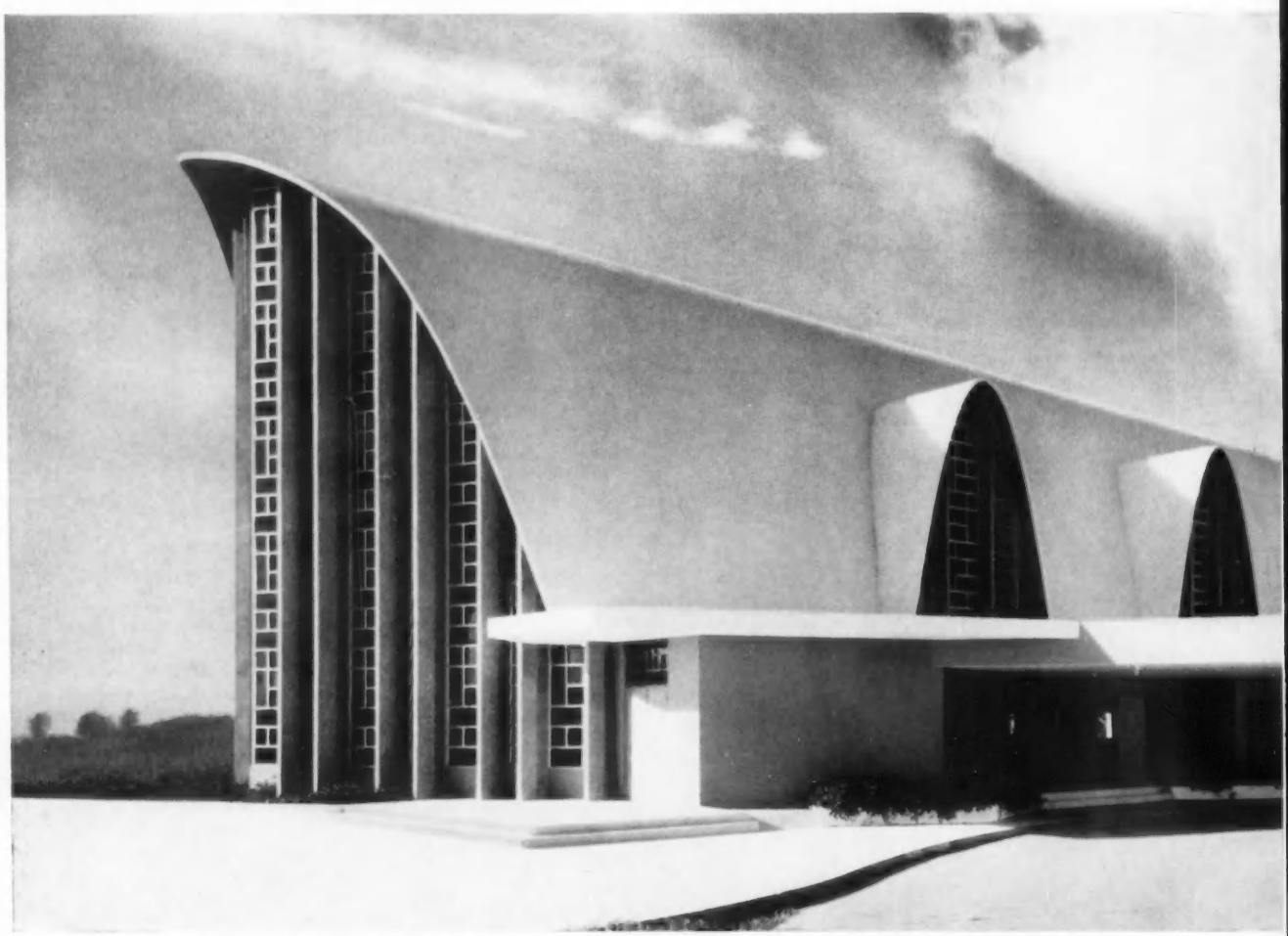

This three-inch reinforced concrete roof of the Santa Maria Reina Church in Ponce, Puerto Rico, is sprayed with coatings based on Du Pont HYPALON. Tests indicate that these coatings will give excellent performance in excess of ten years.

(Right) Two coats were sprayed over the reinforced concrete with conventional equipment. Local labor did the work.

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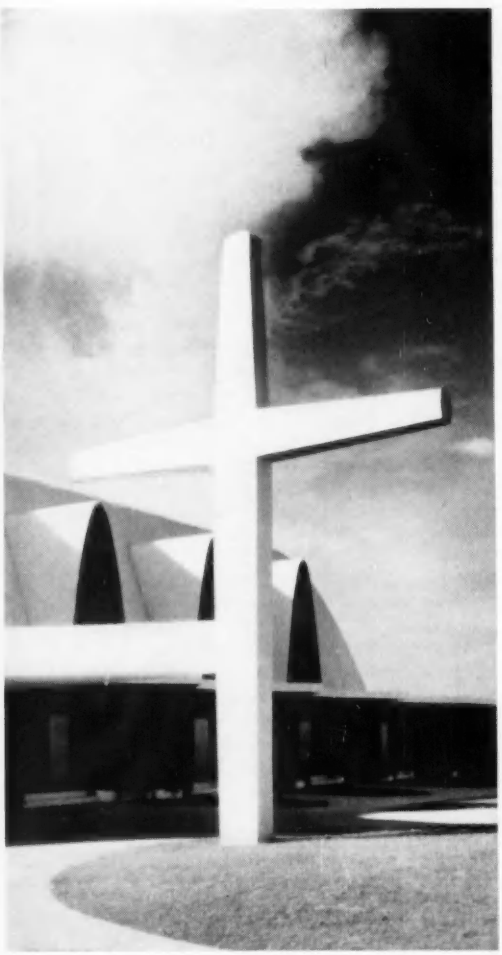

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Washington Topics

continued from page 48

developing the blighted areas of American cities were discussed and rediscussed by those attending the second annual Building Industry Congress for Urban Renewal held in Washington in February.

The one-day affair was sponsored by the National Housing Center, where the meeting was held, with the American Council to Improve Our Neighborhoods and the Urban Renewal Committee of the National Association of Home Builders. Thomas P. Coogan of New York City, a former president of N.A.H.B. and head of the ACTION Home Builders Committee, was chairman.

Following the opening remarks, the Congress settled down to nearly all-day sessions called workshop groups which considered these five separate aspects of urban renewal: financial aid to builders, builder opportunities in urban renewal, how builders help start local urban renewal programs, how to work with local public agencies, and rehabilitation. Each of these smaller meetings was staffed with government and private urban renewal officials, local agency people, experienced builders and developers, and urban renewal consultants. Builders circulated among the various workshops seeking answers to their urban renewal problems.

A "sales mart" feature of the Congress offered cleared land areas for sale or lease on the spot to builders and potential redevelopers. A number of transactions, aided by models, maps, photographs and other data, was reported. "The dirt was scratched for many future deals," one Housing Center spokesman said.

Mr. Coogan remarked, following the sessions: "I am amazed and greatly encouraged by the enthusiastic response and intense interest shown by builders. It is in meetings like this, where builders can meet local urban renewal officials face to face, that the sparks begin to fly, imaginations are kindled, and down-to-earth planning and building activity begin."

An estimated 250 builders, urban renewal officials and others attended the February Congress. Thirty-five local redevelopment agencies were represented.

Small Builders Challenged

William L. Slayton, vice president of Webb & Knapp, Inc., stressed benefits for large and small builders alike in the urban renewal programs. Mr. Slayton said: "I want to emphasize that redevelopment is not limited just to large-scale developers and rental elevator apartments only. My company, for instance, is building or soon will build single-family housing in Chicago, Washington, and Philadelphia. In building such housing we associate with homebuilders and do not use our own construction organization."

Sales housing in redeveloped areas is bound to increase, he said, with planners and officials realizing more and more the importance of mixing single-family sales housing with rental high-rise apartments.

Mr. Slayton added that these close-in redevelopment areas are designed to attract families with children. This means houses with two, three, and four bedrooms are needed and this, in his opinion, is where the small builder can be most effective.

Advantages for the small volume builder were said to include available land, cleared and rough graded; zoning already established with no subdivision plans to be approved; improvements, utilities, and schools already established or to be built. Finally, he made the point that small builders need not worry about financ-

continued on page 330

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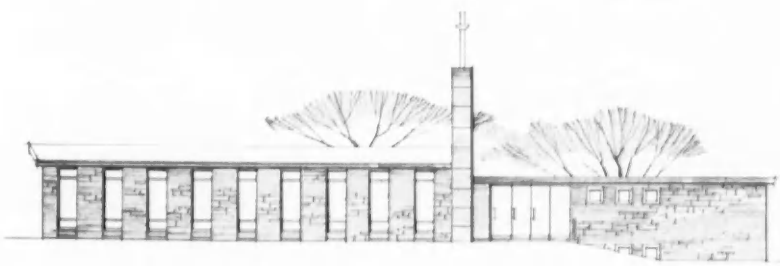

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Onan NEWS REPORT

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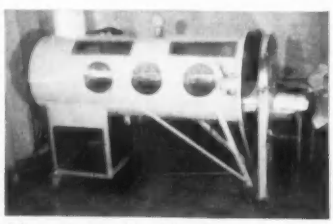
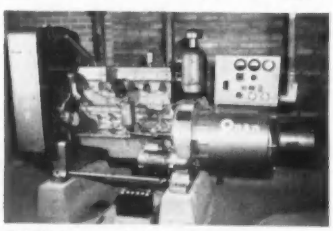


50 respirators like this are operated by the Onan Electric Plant during power outages.



50KW Onan Model 50KA-4R8, installed adjacent to the boiler room at the Kenny Institute. Engine operates on natural gas.

Call your Onan distributor or write for information

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Washington Topics

ing since Section 220 of the housing act gives the small builder in redeveloped areas the same advantages as does Section 203 in other areas.

Where Urban Renewal Is

The day's activities were concluded in a round-up session at which Richard L. Steiner, Commissioner of the Urban Renewal Administration, was the principal speaker. He gave these program progress figures:

On December 31, 1958, 386 communities had embarked on 648 urban renewal projects, of which 10 had been completed—an increase over the 1957 year-end figures of 87 communities, 157 projects, and six completions.

"I think the most significant fact for this group is that in the relatively near future large-acreage tracts in prime locations will be available to redevelopers in nearly a hundred more cities than were on the roster last year," he told the congress.

There were 285 projects in execution at the end of calendar 1958. These statistics, in Mr. Steiner's opinion, indicate clearly that his program is providing great opportunities for builders of all kinds and most significantly for builders of all sizes. And he observed that it is reasonable to expect a growth in the number of redevelopers more or less proportionate to the enlargement of opportunity.

In the fiscal year ending June 30, 1958, he related, some 8000 parcels of land aggregating 864 acres were acquired by local public agencies; during the current fiscal year it is expected that some 16,000 parcels aggregating 1480 acres will be acquired.

According to the URA Commissioner, this is the year when urban renewal will commence to swing away from the limitations of housing objectives to the broader goal of city rebuilding and city modernization. As he put it, "Congress has been nudging our national urban renewal policy in this direction for the past several years, and it now seems inevitable that the change will occur in one form or another in this year's housing legislation. It is interesting to note that concurrently ACTION is broadening its interests and objectives. While I am sure there is no conscious relationship between these two occurrences, they are both responsive to increasing recognition that the serious problems of deterioration and absolescence in our cities involve more than housing. Increas-

continued on page 334

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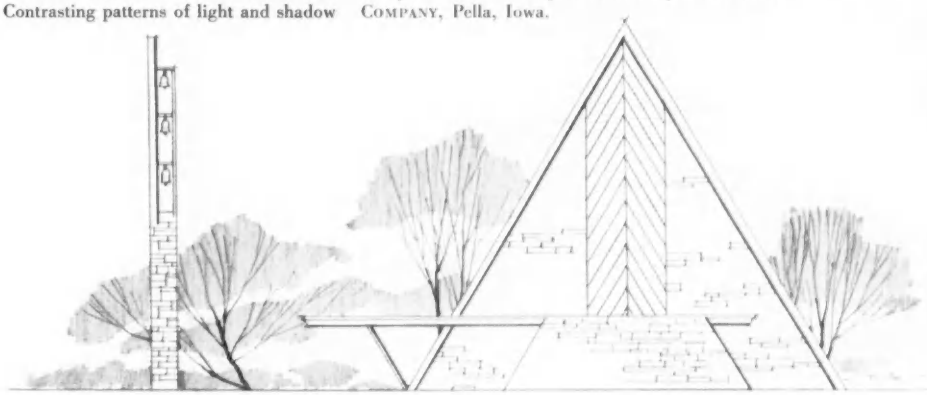
windows add dignity to contemporary worship center

PROBLEM: How to distribute natural daylighting deep in the sanctuary of this chapel while preserving privacy. Here the architect selected PELLA WOOD CASEMENT WINDOWS in their new 24″ x 68″ glass size, with PELLA fixed units in combination overhead. Contrasting patterns of light and shadow created by the louvered marquee break the view of the interior as seen from outside. See the PELLA catalog in Sweet's or write for copy. For nearest United States or Canadian PELLA distributor, consult your classified telephone directory. ROLSCREEN COMPANY, Pella, Iowa.



Now we're cooling with **GAS**

A 22-foot wall of sheer glass... yet it's always cool inside! – thanks to GAS-operated Arkla-Servel air conditioning

The strikingly modern Hillside Church is one of four completely air-conditioned buildings in Rose Hills, Southern California's beautiful memorial park. Because of the liberal use of glass walls, and the desire for one central system, the air conditioning installation presented unique problems.

After a careful study, the Arkla-Servel gas absorptive cooling system was chosen. "And we're com-

pletely satisfied," says John D. Grigg, President. "Our 25-ton gas unit produces 10,000 cubic feet of cool air per minute. And you can't beat it for economy. It requires practically no maintenance. Since it uses the same boiler, it makes use of our heating facilities on a year-'round savings basis."

Gas absorptive cooling can put your heating plant on a year-'round economical basis too. For specific information, call your local gas company, or write to the Arkla Air Conditioning Corporation, General Sales Office, 812 Main Street, Little Rock, Ark. *American Gas Association.*

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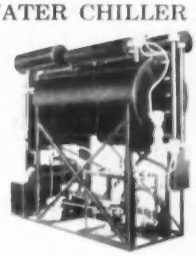
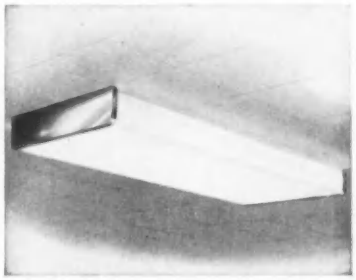


A modern classic in design that gives you efficient, *shadow-free* lighting!



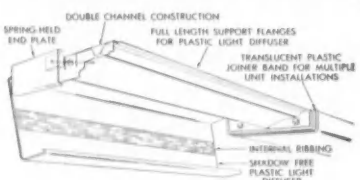
Sun-Lite's new VENUS

4700 Series Fixtures

You'll find these Venus fixtures *styled* to enhance interiors of schools, offices, shopping centers and other commercial buildings—*designed* to provide highly efficient, low-brightness, shadow-free illumination! The smooth, wrap-around plastic diffuser gives light right up to the ceiling—and a special plastic joiner band permits installation of units in a line without unsightly connections!

What's more, they're easy to install—easy to maintain, too! Just pull out the spring-held end plate to swing the light diffuser down for quick access, easy cleaning.

The new Venus fixtures are available in 12″ wide 2 lamp and 15″ wide 4 lamp models in standard and slimline lengths.


DOUBLE CHANNEL CONSTRUCTION
SPRING-HELD END PLATE
FULL LENGTH SUPPORT FLANGES FOR PLASTIC LIGHT DIFFUSER
TRANSLUCENT PLASTIC JOINER BAND FOR MULTIPLE UNIT INSTALLATIONS
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Washington Topics

ingly, the public is demanding that cities be more efficient, that their affairs be better administered, and that city life be more exciting, more stimulating, more satisfying, more rewarding."

Today in a few cities where urban renewal is well advanced, Mr. Steiner asserted, the emergence of the city of tomorrow is evident.

Shelter Research Program Finds Wider Interest, OCDM Reports

The Office of Civil and Defense Mobilization reports that architects are taking an increasing interest in the shelter aspects of its broad program of protection. This is evidenced by mounting inquiries by mail and in person concerning the agency's activities in this field.

Basing their reactions on these displays of interest, OCDM people say they are convinced that more and more building plans are including provisions for shelter.

Research Attacks Problems

The Office is engaged in a shelter research and development program involving hundreds of thousands of dollars.

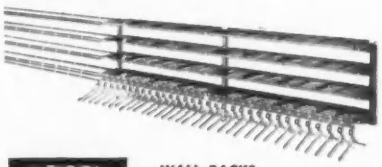
One $30,000 project now in progress involves a study in the metropolitan area of Tulsa, Okla. This is aimed at determining specific civil defense requirements relating to shelter capabilities of existing buildings. The contract covers development of shelter planning goals; survey and inventory of evacuation and protective refuge capabilities to serve as a basis for developing shelter facilities; daytime and nighttime population distribution; shelter siting and evacuation route studies; construction and financing priorities; and an outline of required legislation to expedite a shelter program. Data on the Tulsa efforts should be in OCDM hands this fall following completion of the study September 30.

A survey now being completed by Guy B. Panero, New York, involves the design of modular standardized shelters. This was worked out under a $61,000 contract initiated last July. Involved here was development, design, and preparation of drawings and specifications, bills of material, and cost estimates for modular shelter units that would provide all essential survival requirements. The object was to make available standard package units which could be used by architect-engineer firms for specific shelter designs.

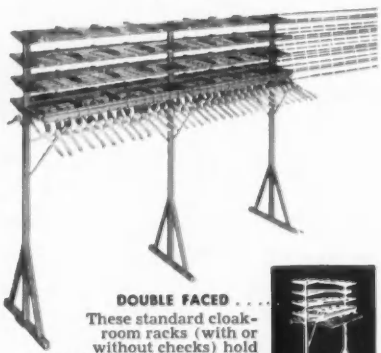
A third project concerns effects of

continued on page 342

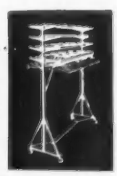
Checker COAT and HAT RACKS

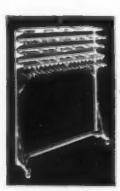


. . . WALL RACKS
Basic 2′ 2″, 3′ 2″, 4′ 2″ and 5′ 2″ units mount directly on wall. Interlocking add-on sections make racks of longer lengths and greater capacity.

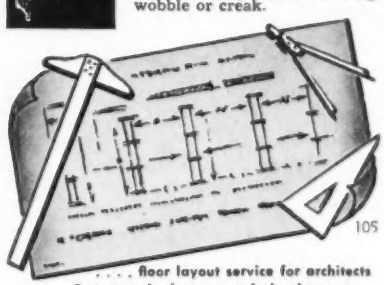


DOUBLE FACED . . .
These standard cloakroom racks (with or without checks) hold 8 coats and hats per foot of length. Also available in 4′ 2″ and 5′ 2″ portable racks—with shock braces and large casters.





. . SINGLE FACE
Stationary or portable racks fit close against wall. Sections snap-lock together to make rigid assembly that will not sag, wobble or creak.



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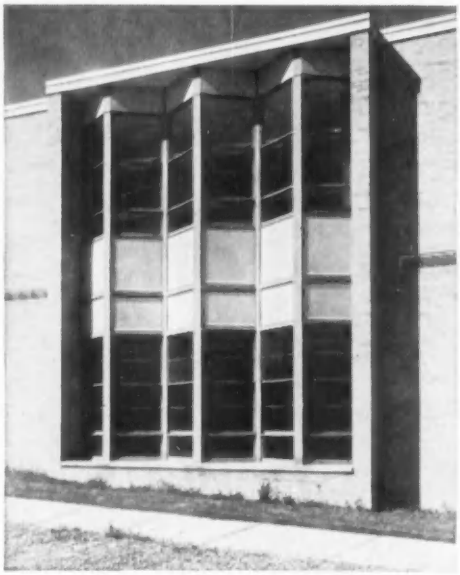

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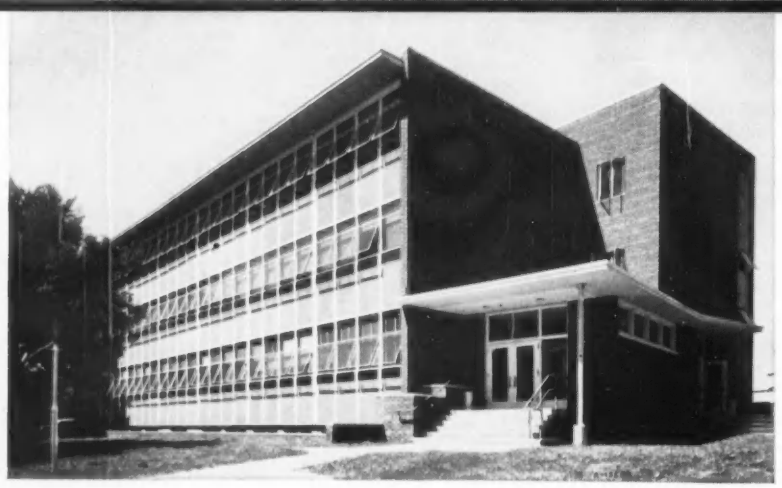

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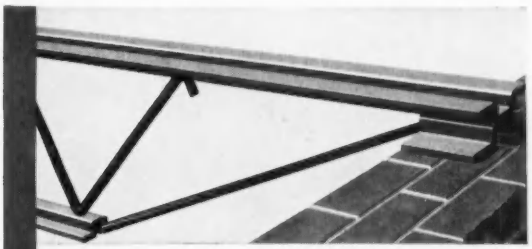
Big feature of Truscon's Vision-Vent Window Wall is its complete *flexibility.* You can select practically any type of window—double-hung, architectural projected, intermediate projected, you name it. Arrangement of fixed lights, operating lights, insulated panels is completely interchangeable. Choose either steel or aluminum.

Truscon's new Supercoat Finish also available in colors. Supercoat is the amazing factory-applied painted surface that eliminates all field painting of steel window walls, staves off maintenance painting for many a year.

Good insulating value, fire-resistance, economy, ease and speed of erection, superior daylighting and ventilation are other Vision-Vent® advantages. And, Vision-Vent blends beautifully with all other construction materials.

Where you are faced with too-high costs and too-low budgets, consider building around Vision-Vent. Send coupon for facts.



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Republic Steel Lockers now Bonderized to take and to keep a finer enameled finish. Made by Republic's Berger Division, these high-quality school lockers will retain their good looks in spite of generations of exuberant high-schoolers. All locker sizes, styles. New, improved handle. Complete planning, engineering, installation service. Send coupon.

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Music and fun in the children's ward
—on Junior Red Cross Visiting Day.

One "Youth Gang" we need more of...

Rock 'n rollers? That's right. *Rock 'n rollers in a children's hospital.*

The three "gang members" are Junior Red Cross members who've taken an afternoon of their time to go to the hospital and entertain some little crippled kids. Reassuring, isn't it?

They do things like this all the time. Regularly. Girls and boys.

20 million of our sons and daughters make up Junior Red Cross—the largest youth organization in the country. Junior members take part in every one of the Red Cross service programs that young people can help to carry on.

When disasters hit, Junior Red Cross volunteers help in many ways—as messengers, typists, canteen workers, information clerks. Many Junior Red Cross members have served with real distinction in disaster emergencies.

Through the Gift Box Program in their schools, Juniors send relief supplies to children overseas. Like all Junior Red Cross activities, this program is financed entirely by the Juniors themselves.

Friendship between children all over the world is fostered by the Junior Red Cross correspondence-album and art programs.

Junior Red Cross is at work every day, helping to build a strong, decent, responsible young America.

These are kids we don't have to worry about. Let's be sure they know they can depend on *us.*

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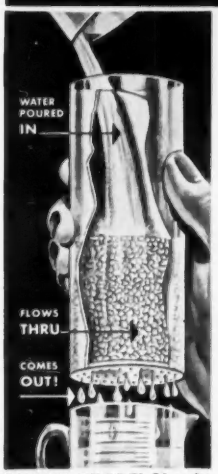
A NEW KIND OF INSULATION FOR MASONRY WALLS!



HERE'S PROOF! Simple test reveals how new Zonolite repels water penetration.

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Revolutionary new and completely different, Zonolite Masonry Fill Insulation brings you the faster, easier, lower-cost way to insulate concrete block, tile, and cavity walls. A triumph of laboratory and technical research, it is processed under U.S. Patent 2,824,022 to stop water penetration like no other insulation can. Now puts an end to the bug-a-boo of moisture problems in all types of block and cavity wall construction.

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Walls filled with this new material have up to twice the insulating value. Greater comfort results; fuel bills are reduced; air conditioning costs cut—*substantially.*

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Quick digest of technical facts for your

Choose From Two Types

Thermopane with *Bondermetic Seal*® is composed of two or more lights of glass separated by a ¼″ or ½″ dehydrated air space. The *Bondermetic* (metal-to-glass) *Seal* between the two pieces of glass hermetically seals the unit. The edge is further protected by a metal channel which provides greater ease of handling and minimizes the chance for edge chipping during installation.

The glass is specially washed, the air scientifically cleaned and dried, and the *Bondermetic Seal* applied. The dehydrated air within the unit is at an atmospheric pressure of 600 feet above sea level.

Thermopane with *Bondermetic Seal* is commonly used in picture windows, window walls and sliding glass doors. ½″ *Thermopane* is available in 50 standard sizes; 1″ *Thermopane* in 60 standard sizes.

GlasSeal® *Thermopane* is made from either *double* strength or *single* strength window glass with a nominal 3/16″ air space between the panes. DSA units are available in 65 standard sizes, SSA in 18 standard sizes for double-hung and other popular types of sash. Single strength units are up to 25% lighter and, when used in double-hung sash, are easier to balance and operate.

GlasSeal Thermopane is limited in use to altitudes up to 3000 feet.

Thermopane, being factory fabricated, cannot be altered after manufacture without damaging the unit.

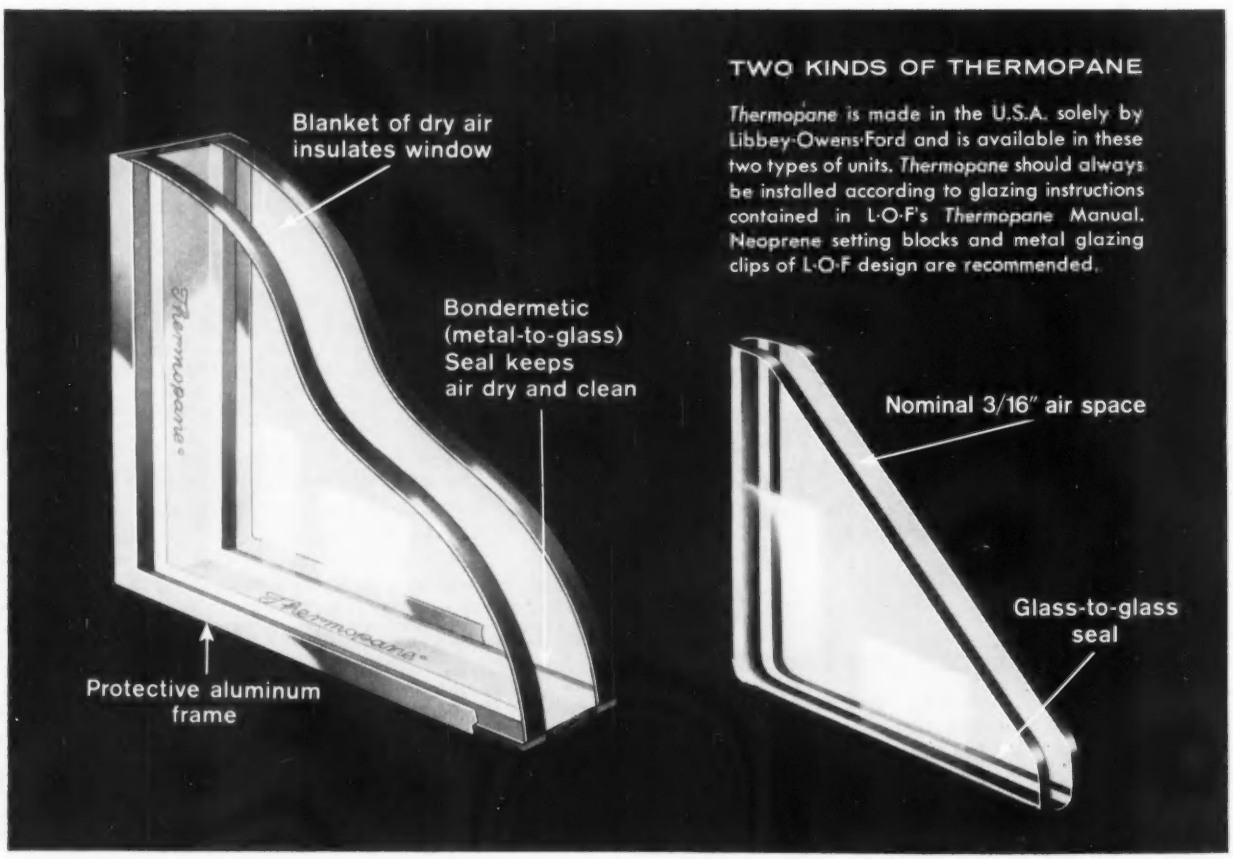
Choose Your Kinds of Glass for Thermopane

Thermopane units with *Bondermetic Seal* are available in various glass combinations, but glass thickness in the same unit cannot vary over 1/16″. For example, a unit cannot be manufactured with one light of ¼″ thickness and one light of 1/8″ thickness.

kinds and thicknesses of glass

	kind	thickness
Libbey-Owens-Ford	*Sheet (Window Glass)	
	Double Strength "A"	1/8″
	3/16″ Heavy Sheet	3/16″
	Polished Plate	
	Regular	1/8″, 1/4″
	Parallel-O-Grey®	1/4″
	Heat Absorbing	1/8″, 1/4″
	Tuf-flex®	1/4″
Blue Ridge	Plain Patterned	
	Hammered, Velvex	1/8″, 7/32″
	Flutex	7/32″
	AKLO Hammered	1/8″, 1/4″

*Single strength or picture glass cannot be used.


Blanket of dry air insulates window
Bondermetic (metal-to-glass) Seal keeps air dry and clean
Protective aluminum frame
TWO KINDS OF THERMOPANE
Thermopane is made in the U.S.A. solely by Libbey-Owens-Ford and is available in these two types of units. Thermopane should always be installed according to glazing instructions contained in L-O-F's Thermopane Manual. Neoprene setting blocks and metal glazing clips of L-O-F design are recommended.
Nominal 3/16″ air space
Glass-to-glass seal

file on Thermopane® insulating glass

Why Thermopane Saves Heat (U VALUE — Winter)

Over-all heat transmission coefficient (U value) varies with ranges of temperature at which coefficient is determined. For most practical heat loss calculations coefficient U can be the value determined at 10° outside temperature, 70° inside temperature, 15 mph outside air velocity and natural convection inside. Therefore, the U values shown here apply to winter heat losses.

type	thickness	U value		
single glass	1/8"	1.16		
	1/4"	1.15		
double Thermopane	1/8" or 1/4"	3/16" air space* .69	1/4" air space .65	1/2" air space .58
triple Thermopane	1/4"	1/4" air space .47		

*GlasSeal Thermopane only.

How it Reduces Air-Conditioning Costs (U VALUE — Summer)

Summer air cooling calculations are usually based on an outside air temperature of 95° and exterior wind velocity of 7.5 mph, a room temperature of 75°. U values for these summer conditions are given below.

type	glass thickness	U value		
single glass	1/8"	1.07		
	1/4"	1.06		
double Thermopane	1/8" or 1/4"	3/16" air space* 0.64	1/4" air space 0.61	1/2" air space 0.56
triple Thermopane	1/4"	1/4" air space 0.45		

*GlasSeal Thermopane only.

Reduction of Cooling Load

Summer heat transmitted through glass is divided into three types or may be said to come from three sources: (1) direct solar radiation, (2) sky or diffuse radiation, (3) outdoor-indoor temperature differential. The *Thermopane* Manual offered upon request gives formulas and charts for calculating cooling loads in residential and nonresidential buildings.

Why You're More Comfortable Near Thermopane

temperatures of glass surface on the warm side and per cent relative humidity (RH) at which condensation occurs (dry bulb air temperature 70° F. on warm side)

no. of panes	glass thickness	air space thickness	dry bulb air temperatures on cold side													
			−30°		−20°		−10°		0°		+10°		+20°		+30°	
			T	RH	T	RH	T	RH	T	RH	T	RH	T	RH	T	RH
single glass	1/8"	none	2°	5.5	9°	8.5	15°	12.0	22°	16.0	28°	21.0	35°	28.0	42°	36.5
	1/4"	none	5°	6.0	11°	9.5	18°	13.0	24°	17.0	30°	22.5	37°	29.5	43°	37.5
double Thermopane	1/8"	1/4"	35°	28.0	38°	31.5	41°	35.5	44°	39.5	47°	45.0	51°	50.0	54°	56.5
		1/2"	38°	31.0	41°	32.0	43°	38.0	46°	43.0	49°	48.0	52°	54.0	55°	60.0
	1/4"	1/4"	36°	28.5	39°	32.5	42°	36.5	45°	41.0	48°	47.0	51°	52.0	54°	58.0
		1/2"	39°	31.5	42°	33.0	45°	40.0	47°	45.0	50°	50.5	53°	56.0	56°	62.0
triple Thermopane	1/4"	1/4"	46°	41.5	48°	44.5	49°	49.0	52°	54.0	54°	58.0	57°	63.0	59°	68.5
GlasSeal Thermopane	1/8"	1/16"	34°	26.0	37°	29.5	40°	33.0	43°	37.0	46°	42.5	50°	49.0	53°	55.0

Above chart is based on normal convection currents on room side when unobstructed by curtains, draperies or heavy muntins. Condensation will occur at slightly higher inside temperatures than as shown on the charts if curtains, shades or the construction of the window prevent free air movement over the surface of the glass.

You will note from the above chart that when it is really cold outside, the inner pane of *Thermopane* will be as much as 34° warmer than if a single pane was used. That saves heat. Reduces drafts. Makes rooms more comfortable, even near windows. It reduces condensation. For example, with temperatures 70° inside and 0° outside, the inner pane of *Thermopane* will be over 20° warmer than would single glass. Thus, the relative humidity can be up to 28% greater before condensation will form.

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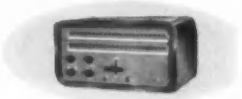

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Washington Topics

mass fires on persons in shelters. The Forest Service of the Agriculture Department is conducting this one under a $53,000 contract and expects to wind up its work by the end of this year. These studies will determine the nature of the threat of hazardous doses of carbon monoxide and other products of combustion in shelter ventilating systems. They also aim at determining temperatures to be expected in shelters in fire areas.

All OCDM expenditure on research since 1951, for all civil defense purposes, has been $25 million. Projects costing $1.3 million have been approved and now await Congressional funds. Included in the latter category is $100,000 for studying hospital shelter design, $25,000 for studying engineering shelter equipment. The agency seeks an added $7.3 million for research for the next fiscal year starting July 1.

"We now have, for the first time, a national shelter policy, adopted by an Administration with foresight and courage," OCDM Director Leo A. Hoegh said recently.

"The Federal government provides the guidance and example—by informing people of the threat and how to meet it—by building prototypes—by providing fallout protection in its own buildings, and by urging every citizen to build his own fallout shelter.

"To make shelter most usable and effective, we must know where fallout occurs, and how strong it is. Therefore, we also are undertaking a tremendous program to develop national capability for detecting and measuring radiation."

PBS Studies Prototype Shelters

One of the largest research projects is a $300,000 prototype shelter design and specification effort underway in the Public Buildings Service, General Services Administration. With no date set for its completion, this calls for study, construction, specifications, and cost estimates on five prototype fallout shelters as follows.

1. A 250-car (5000-person) two-story underground garage shelter against fallout in Washington.
2. A 1000-person understreet fallout shelter on a site to be selected in Chicago.
3. A 1000-person subway fallout shelter conversion in an existing subway in New York.
4. A 500-person fallout shelter conversion in an existing industrial plant to be selected in Detroit.
5. A 1000-person fallout shelter

continued on page 346

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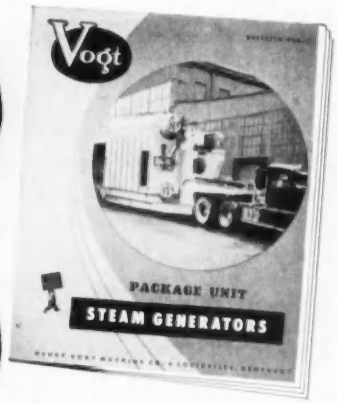

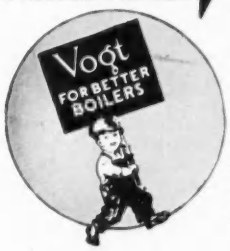

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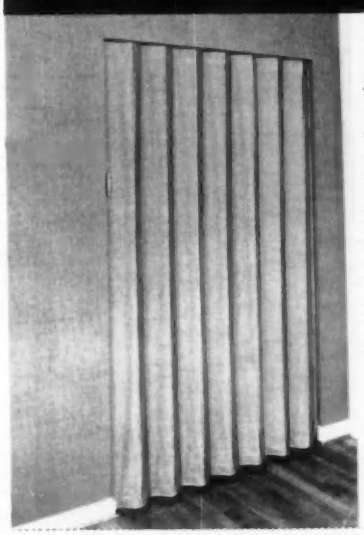

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the accompanying quotation is from a talk before the thirty-eighth annual meeting of the Eastern Association of College and University Business Officers held in Washington in December 1957 —delivered by Ernest V. Hollis, director of college and university administration, U.S. Office of Education

"We have three powerful and salutary forces working together to bring the profession to maturity. The oldest of these are the regional associations of college and university business officers, of which none has played a more important role than the Eastern Association. Among the many significant projects of the regional associations none has contributed more to the growth of the profession than the workshops for upgrading personnel that have been nurtured so ably by Charlie Hoff in Nebraska, Frank Peterson in Kentucky, Ray Kettler in California and the committee on workshops of the Eastern Association.

The second of these forces is the National Federation of College and University Business Officers, which is new, but which has already sponsored the 60-college study and several other projects of nationwide significance.

unifying and stimulating

The third unifying and stimulating force that has advanced the profession is a commercial one. I refer to Hal Herman [editor] and his associates, who are doing such a magnificent service for the profession through the publication College and University Business.

The only part of the profession I am talking about this evening is the chief business officer of institutions and those among his associates who want to become, like him, generalists rather than specialists in the field."

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College and University Business was established in 1946 with the explicit purpose of being "unifying and stimulating" to those responsible for business management in the field of higher education—presidents, business managers and their staffs: superintendents of buildings and grounds, controllers, purchasing agents, and the directors of housing, food service and student centers. Ask any of these men and women, anywhere, how well the magazine has succeeded.

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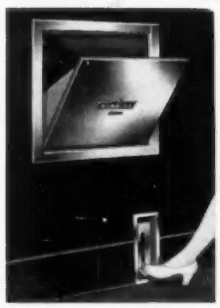

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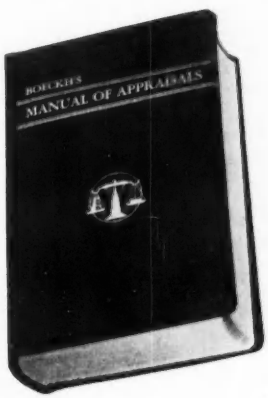

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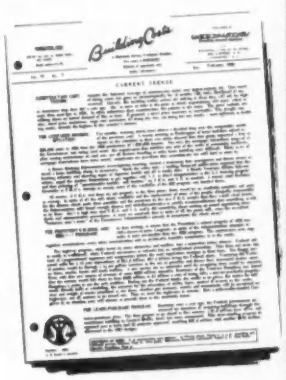

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Washington Topics

in an existing commercial structure to be selected in one of four cities—New York, Kansas City, Indianapolis or Montgomery, Ala.

Reuss-Thompson Proposal Would Aid Historic Preservation

Representatives Henry S. Reuss (D-Wis.) and Frank Thompson, Jr. (D-N. J.), circulated a proposed bill which would deny Federal funds to any program seriously damaging or altogether destroying buildings of historic significance. They said they intended to introduce the measure when it was "perfected."

The Congressmen represented the proposal as "putting teeth into the Federal government's bumbling program of historic preservation," and described the move as essential if many of the nation's historic monuments and structures—including sections of towns and cities—are to be spared.

"Through its ownership of about 21 per cent of all land in the United States, the Federal government itself has a major role to exercise in preserving important historical buildings and sites," their statement read. ". . . A building or site that is more than 10 years old has to fight for its life."

Plan Prestressed Concrete Test On Air Force Runway

Initial construction began recently at Briggs Air Force Base, El Paso, Tex., on facilities for the first major test of prestressed concrete for airport taxiways.

The U. S. Army Corps of Engineers is conducting the experiment in cooperation with industry groups in an effort to determine the feasibility of this type of material for taxiway use.

A roadway area 75 ft wide and 1500 ft long is being built as part of the expanded runway construction at Briggs. The test section will involve post-tensioning of the material, and Army spokesmen say the results would have far-reaching effects on both airport and highway construction.

Several years of rigid testing procedure will precede any final conclusions, it was indicated, but the Corps is expected to issue progress reports from time to time.

Addenda

Architects and engineers moved a step closer to their coveted program of tax relief for the self-employed. The House Ways and Means Committee approved a bill which would per-

continued on page 354

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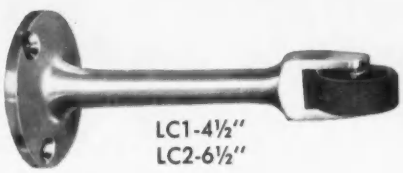
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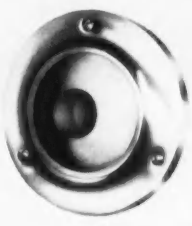
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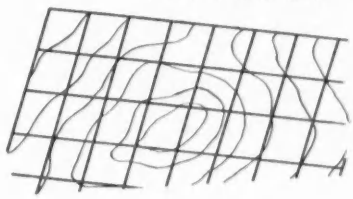

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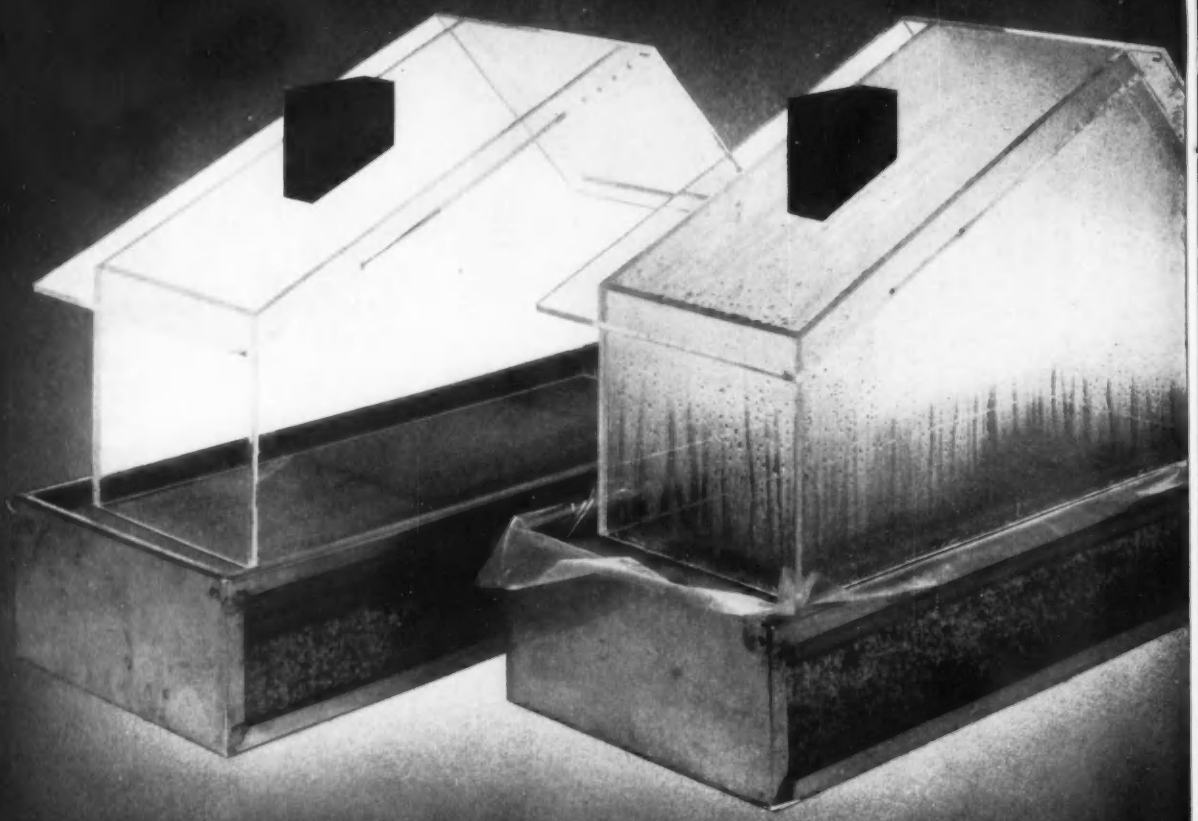

This structure is protected by *PM

This structure is protected (?) by a plastic vapor barrier

NOTICE THE DIFFERENCE!

Pictured above is a display that has attracted widespread attention wherever it has been exhibited. Both houses, concrete slabs and tanks are identically constructed. The tanks are filled with sand, to represent soil, and water is added. On top of the soil is placed a vapor seal . "PM" under the house on the left and a plastic film under the house on the right. Heat is applied to the tank to accentuate the creation of vapor and the results are very apparent. Notice that the house protected by "PM" (left) is completely dry while the house on the right has become a virtual steam bath. The results are even more amazing when you consider the fact that the plastic film under the house on the right is a monolith without the seams, openings and ruptures that would be present in full-scale construction.

a virtual "steam bath"?

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Moisture migration into the structure from the site is an age old problem . . . a problem that is accentuated in today's modern buildings. Old buildings, constructed without benefit of new materials and better construction methods, permitted excessive moisture to escape. Today's tightly and expertly constructed buildings trap this moisture inside and the problems resulting from excessive moisture soon follow. Dampness, window condensation, paint failures, mildew, rust and rotting wood are all problems that can be eliminated if the structure is isolated from the site, the source of 80% of this moisture.

Fortunately, the building industry has recognized the need to install a vapor barrier . . . unfortunately, it has been guilty of the promiscuous use of permeable materials as vapor barriers. Plastic films and other similar materials would never be used to replace glass in windows because they would not eliminate weather penetration and would easily rupture. These same reasons disqualify these products as vapor barriers. Even more important, a vapor seal is installed permanently at the time of original construction . . . it cannot be replaced at a later date in case of a product failure.

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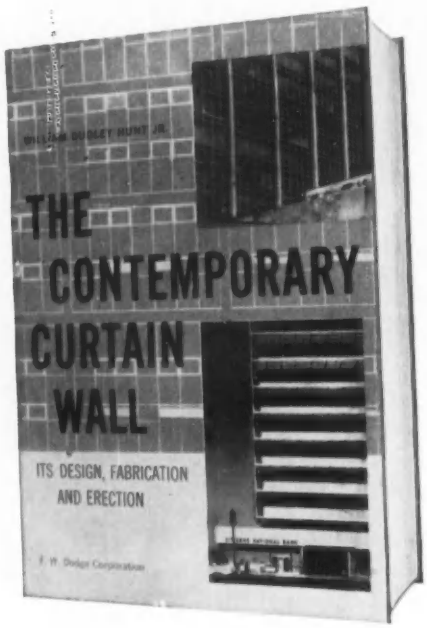

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its design, fabrication and erection

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Here, at last, is the complete, authoritative reference work of curtain wall design and construction. Starting with a review of the purposes of any wall, this vital new book contrasts curtain walls and load-bearing walls in every possible way — weight, time of erection, wind resistance, weatherproofness, fire resistance, costs, thickness, maintenance — and indicates the advantages and disadvantages of each system. It shows you how curtain walls take advantage of present-day materials and factory production methods.

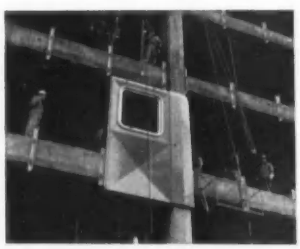
Then, chapter-by-chapter, a wealth of information on curtain wall construction is presented. The functions (and malfunctions) of the walls are analyzed, and then each component is studied in detail. Different types of frames, facings, insulation, joints, fasteners, and solar controls are described in the text, and shown in clear line drawings. Photographs show these details as they appear in actual buildings.

Materials are studied next. Every known material from which curtain wall panels are manufactured is covered. Here you will find complete, concise data on the advantages and disadvantages of each material, its chemical, physical, and mechanical properties, its durability and appearance. Sample specifications are given, and a listing shows the different sizes, styles, and gages in which each material can be fabricated.

The next chapters treat assembly methods. Standards, production methods, erection are all outlined in detail. Tests and specifications are given — a mass of practical data to help avoid common errors in curtain wall erection.

Although this book contains a voluminous amount of detail, both in text and drawing, it never loses sight of the broad picture. Overall design considerations and esthetics are discussed at length, and many excellent photographs show all types of curtain wall buildings.

The final chapter of THE CONTEMPORARY CURTAIN WALL takes a look at the future of this building method. Here the effects of increasing mass-production, use of standardized components, and non-use of local materials is surveyed. The possibility of numerous look-alike buildings is balanced against the infinite number of materials, forms, and colors made available, and the conclusions drawn are stimulating and provocative.



THE AUTHOR

William Dudley Hunt Jr., A.I.A., joined *Architectural Record* in 1958 as a senior editor. For eight years prior to this, he practiced architecture in Alabama, Louisiana, and Florida. He has been director of research and development for a building products manufacturer, and has also been active in industrial design work. In addition, he has taught engineering at Tulane University and Alabama State College.

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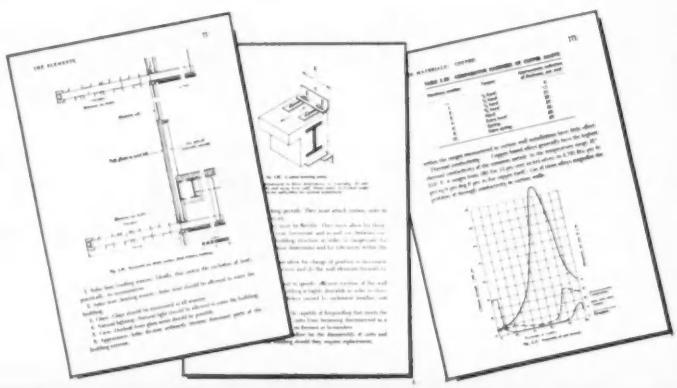

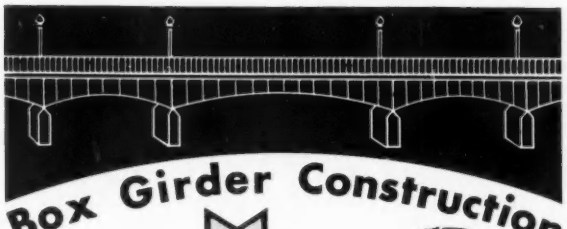

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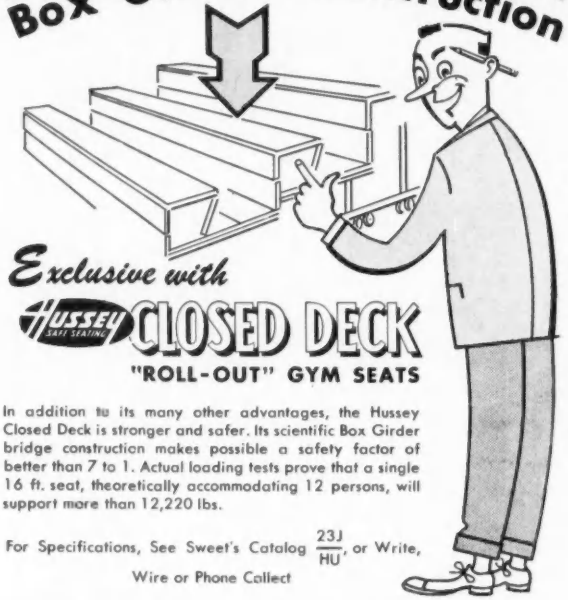

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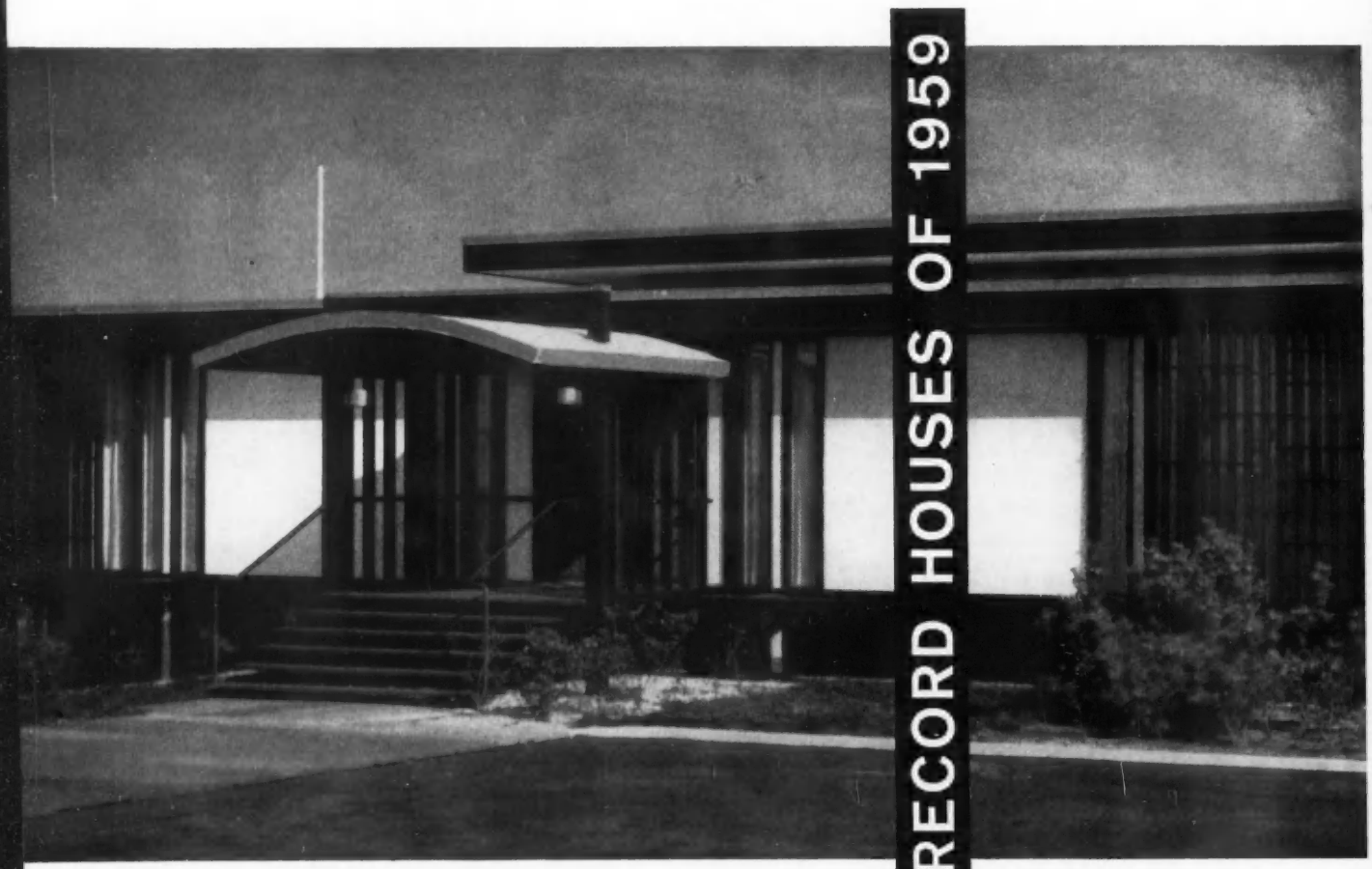

Next mid-May "Record Houses of 1959" will present Architectural Record's 4th annual selection of America's finest architect-planned houses of the year.

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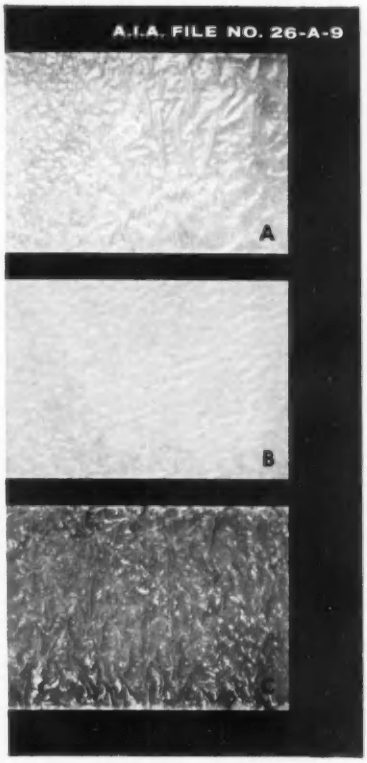
Washington Topics

mit self-employed persons to defer Federal taxes on 10 per cent of income placed in a retirement fund up to $2500 a year. The American Institute of Architects has been one of the organizations strongly supporting legislation of this type. The House was expected to put the measure through; but resistance could be expected in the Senate on grounds its effect would remove a substantial amount of U. S. Treasury tax take, an estimated $365 million each year.

The National League of Insured Savings Associations concluded its annual spring legislative conferences here, reaffirming its request for the creation of a secondary market operation for conventional housing loans within the Federal Home Loan Bank Board. The League was preparing to take its request to Congress when the House and Senate subcommittees on housing started their hearings on the subject.

The recession of 1958 drove more companies to waterways for industrial sites in order to take advantage of low-cost barge transportation, the American Waterways Operators, Inc., found in its survey of last year's construction along the water routes. This construction and development of industrial plants and waterside facilities of all kinds increased, running against the year's trend for industrial construction as a whole. The survey indicated that 488 water route industrial plants were constructed or expanded in 1958 compared with 486 in 1957. The high point for this activity was in 1956 when 565 plant locations were developed.

A substantial program of Federal assistance in the construction of long-term care and rehabilitation facilities has been progressing for four years under terms of the Hill-Burton act, but it has managed to bolster inventories only to a point where less than one tenth of the hospitals of this kind needed are in operation. This is plainly indicated by recent surveys of buildings in use for the care and rehabilitation of long-term patients. The law earmarks more than $60 million a year for the construction of chronic disease hospitals, nursing homes, and diagnostic treatment and rehabilitation centers. Here's the accomplishment to date: more than 7000 beds for long-term patients of this kind have been provided in almost 200 rehabilitation and treatment centers.



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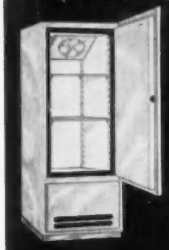

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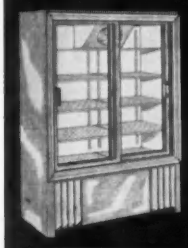

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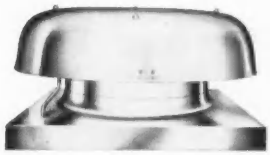

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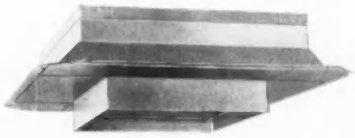

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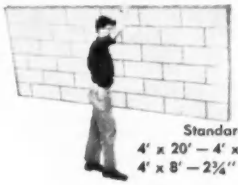

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1740-1952 . . . *cont. from page 60*

rectory was published in 1955, there had never been a compilation of biographical data on the architects of this country. That volume, however, covered only architects living at the time of compilation. This new *Biographical Dictionary* fills in the period up to the point where the *Directory* begins, giving the names of architects who lived between 1740 and 1952. The compilers, Henry F. Withey, a Sherman Oaks, Cal., architect, and his wife, labored for a good many years assembling the material for this unique source of information on the architects of the United States. Their pioneering efforts in this work were prodigious, requiring the perusal of countless newspapers, magazines, and journals, and correspondence with A.I.A. chapters and with individuals.

In so enormous an undertaking, a certain number of inaccuracies is perhaps inevitable. But another edition, which it is to be hoped will be forthcoming after the proper interval, will undoubtedly have found them out and corrected them. Perhaps also, a fuller listing of the works of each architect may then be possible. The important thing about this book is that it has been done, and that now the task of assembling and giving form to so large a number of biographical sketches will never again be so great as it was this first time.

—ELISABETH KENDALL THOMPSON

Steel . . . *cont. from page 64*

The first sixth gives a clear introduction to the basic concept of plastic strength of sections and redistribution of stress. The second sixth explains the principles and application of the analysis of continuous beams and rigid frames. The remaining two thirds is devoted to actual analysis and design. In some cases alternate designs are prepared and weights computed to indicate to the reader the effect of variations in the structure.

The text contains an unusual set of design guides or check-lists which break down each design process into a detailed series and should do much to help the unfamiliar avoid errors of omission. A complete chapter is devoted to the design of typical rigid welded joints. Some of the more advanced problems are treated briefly, but their effects on design are described and references to more comprehensive treatments are included for those in need of such data.

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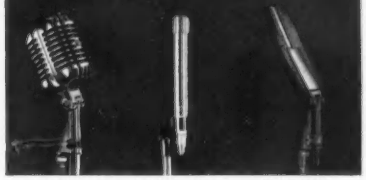

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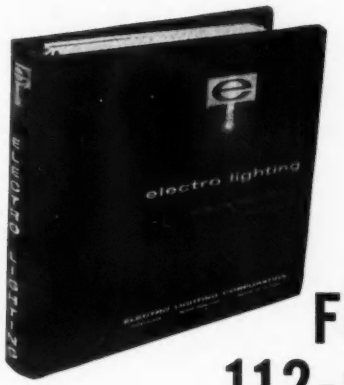

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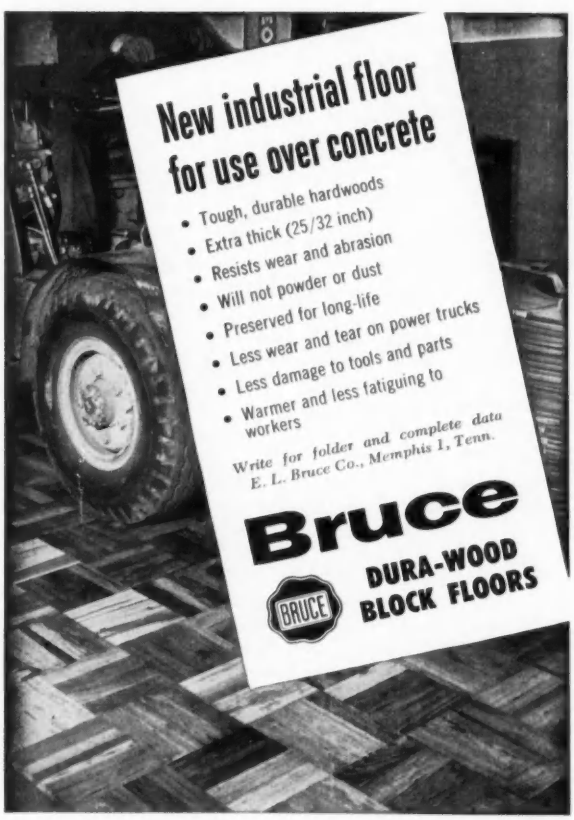
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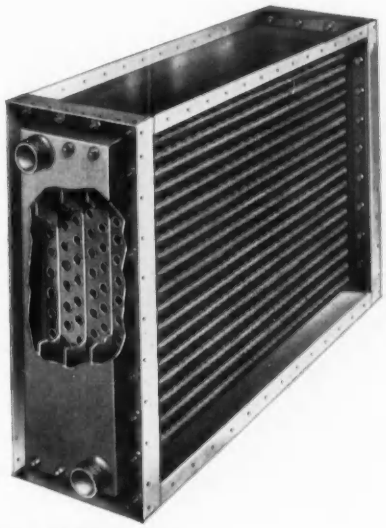

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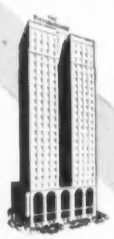

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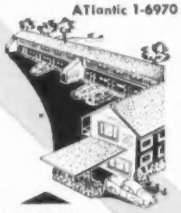

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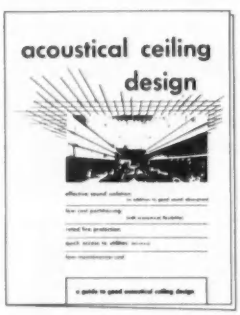

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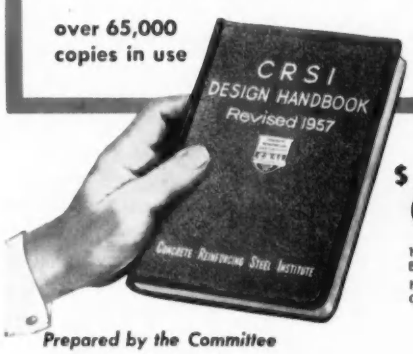

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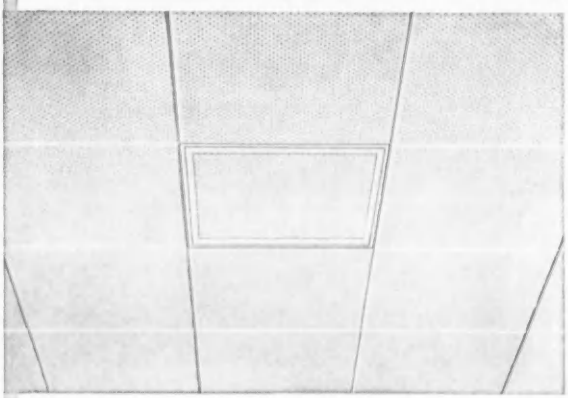

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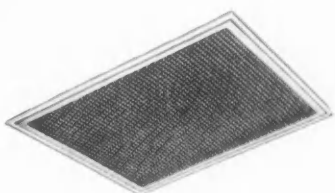

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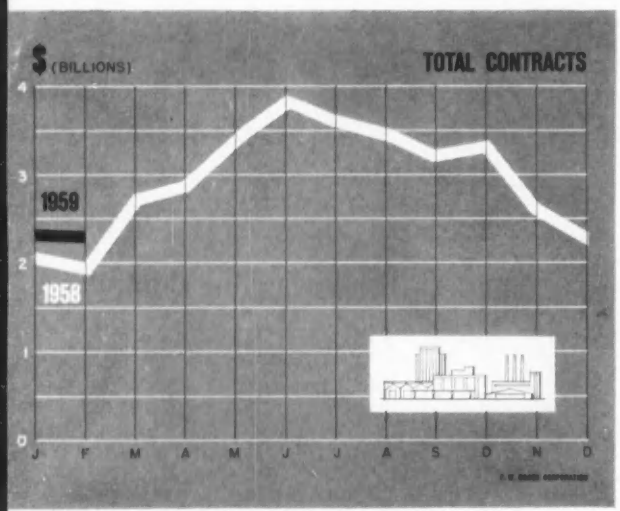
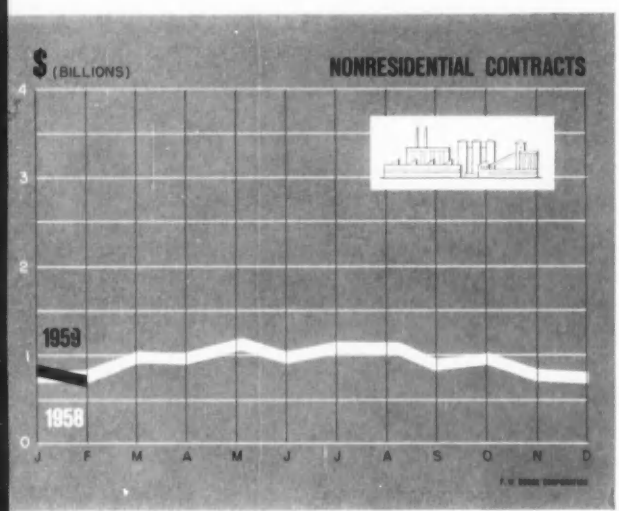
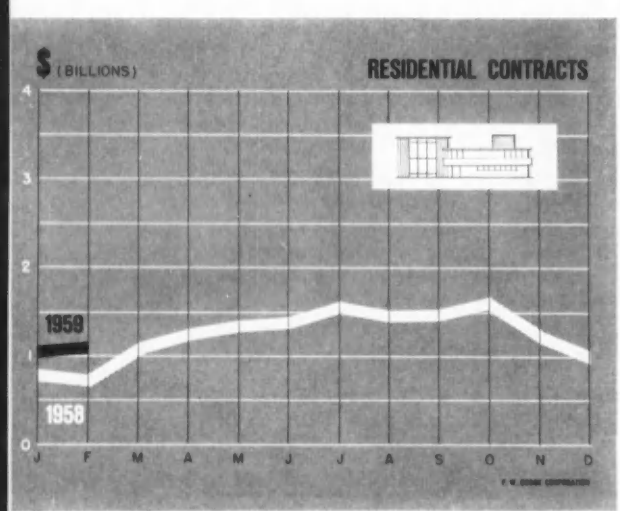
Current Trends in Construction



Total contracts include residential, nonresidential, heavy engineering contracts





FROM THE POINT OF VIEW OF AN ARCHITECT (or at least from an economist's idea of an architect's point of view) there's a very encouraging note in the latest construction trends. Much of the strength in the industry last year—and it was strong, despite the recession—was in the public works group, particularly highways. In recent months, most of the building categories have been coming up fast. Housing has been doing very well, and apartment building is heading for a boom. The long slide in factory building has come to an end, and February will probably show the first real improvement in industrial contracts in nearly two years. Most other nonresidential building types are going up nicely, with the rather baffling exception of schools. Even so, school contracts are still enormous, accounting for 21 per cent of all nonresidential building in January.

STORES, subject of this month's Building Types Study, bring architecture and economics together more neatly than perhaps any other kind of building. A store that is well designed, well located and well managed is a successful store. Lacking any one of these qualities, it stands a good chance of being a failure. In this area, Americans are unquestionably world leaders. We have done some marvelous things in store building. But anyone who moves around on our highways must observe that a considerable number of owners and developers are badly in need of a higher level of sophistication both as to design and location. There's a tremendous educational opportunity lurking here, especially in 1959 when store building is likely to be the busiest nonresidential building type.

BUILDING IN 1959 began with a bang. The Dodge figures on contracts for future construction in January totaled more than $2.3 billion, about 15 per cent above January, 1958. What this means is that construction has recovered from the late recession, and is back at its old postwar trick of setting one new record after another. The January figure is the highest ever recorded for any January, and advance indications are that February also did pretty well.

AN ECONOMIST can't afford to overlook any potentially significant indicator of future trends, and one thing we can't help noticing is that women's skirts are getting much shorter. As nearly everyone knows by now, there is an excellent correlation between skirt lengths and the business cycle. Rising hemlines mean rising stock prices and booming business, and vice versa. Nobody knows why this is true, but it has worked in the past and it might even work in the future. And it is undeniably more interesting than some of the other economic indicators we have to follow. Knobby knees are not the most esthetically satisfactory subject to contemplate, but that is a small price to pay for prosperity.

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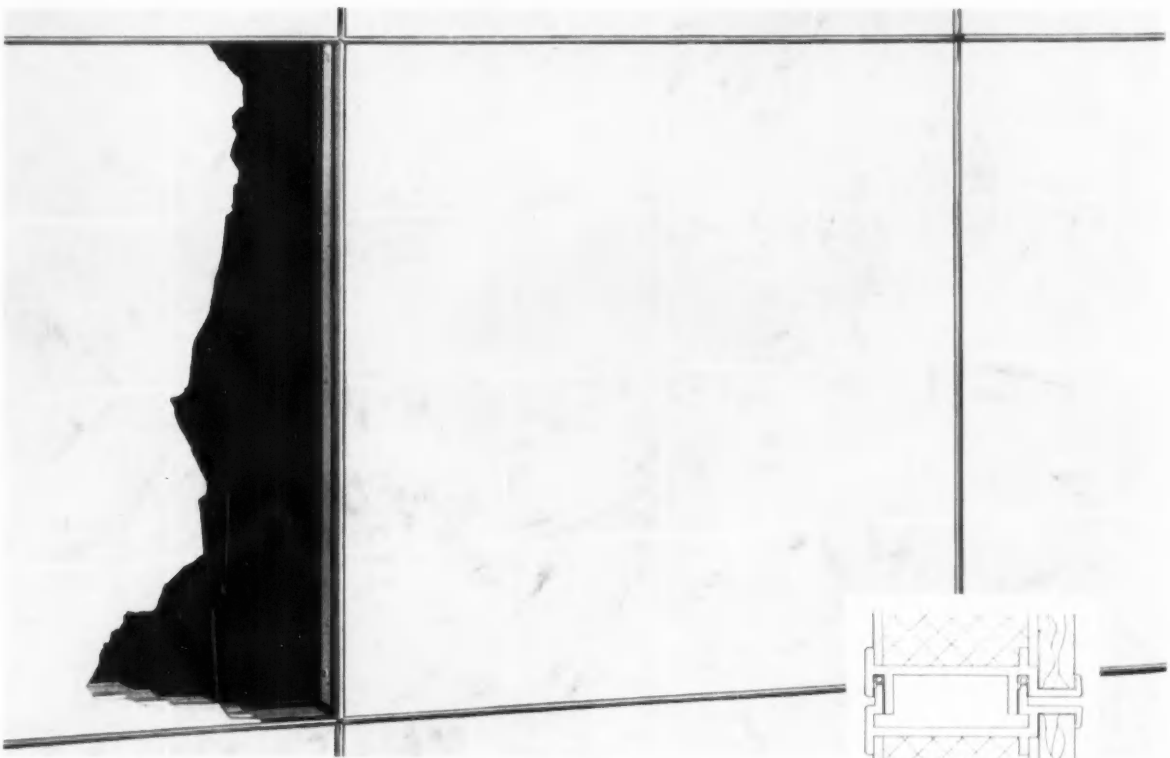

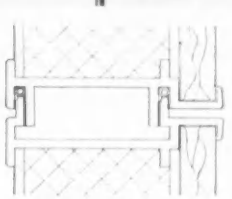

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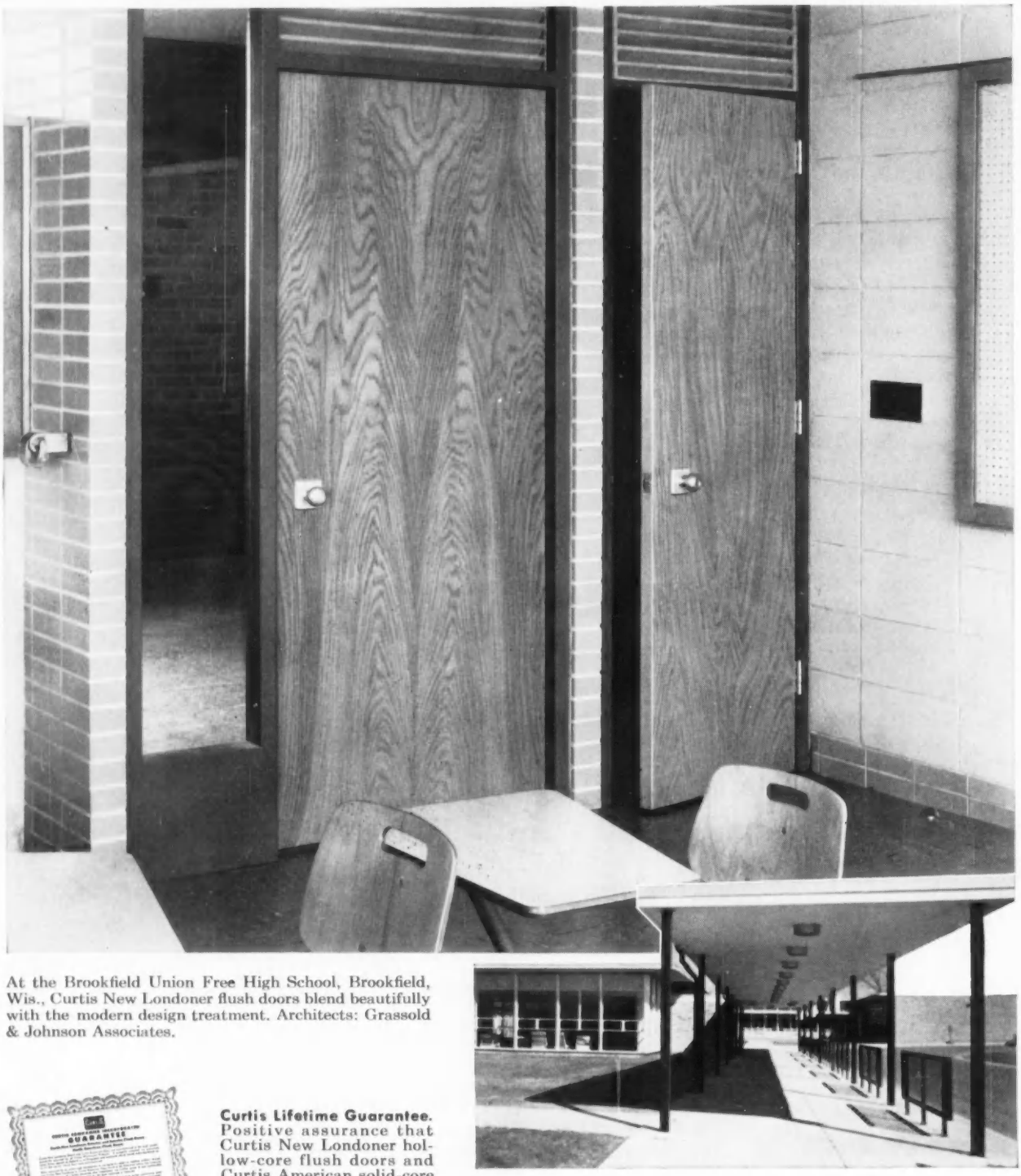
102 SCHOOL ARCHITECTS CHOOSE



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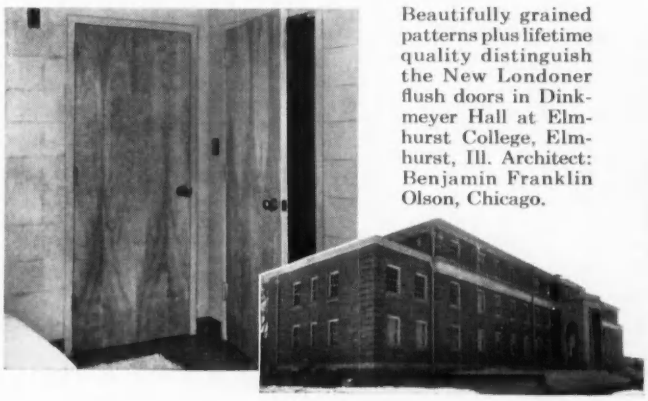
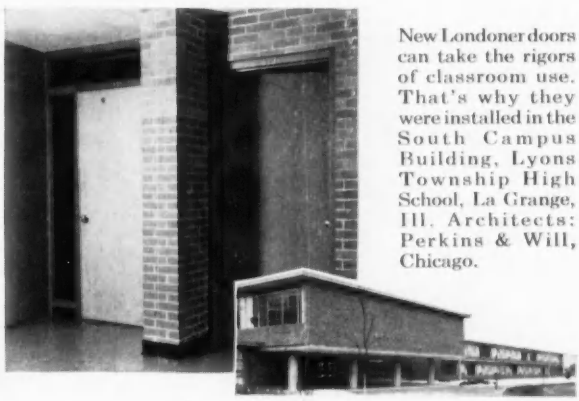
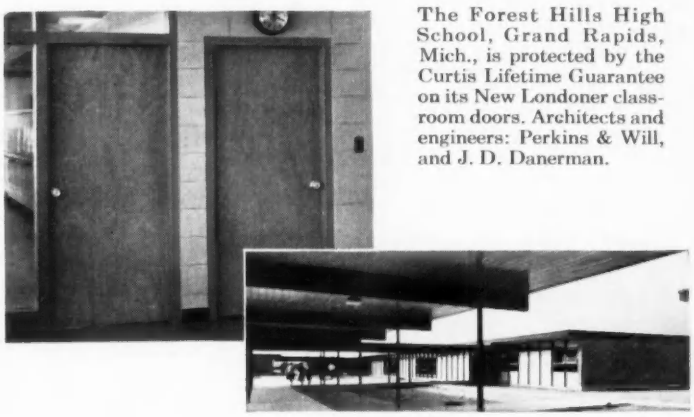


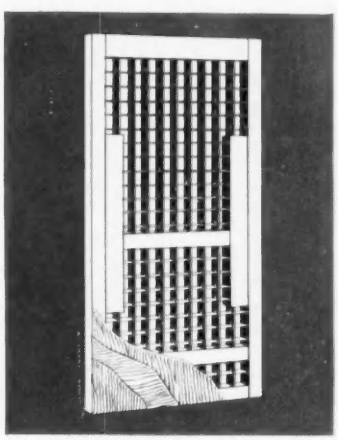
Beautifully grained patterns plus lifetime quality distinguish the New Londoner flush doors in Dinkmeyer Hall at Elmhurst College, Elmhurst, Ill. Architect: Benjamin Franklin Olson, Chicago.



New Londoner doors can take the rigors of classroom use. That's why they were installed in the South Campus Building, Lyons Township High School, La Grange, Ill. Architects: Perkins & Will, Chicago.



The Forest Hills High School, Grand Rapids, Mich., is protected by the Curtis Lifetime Guarantee on its New Londoner classroom doors. Architects and engineers: Perkins & Will, and J. D. Danerman.



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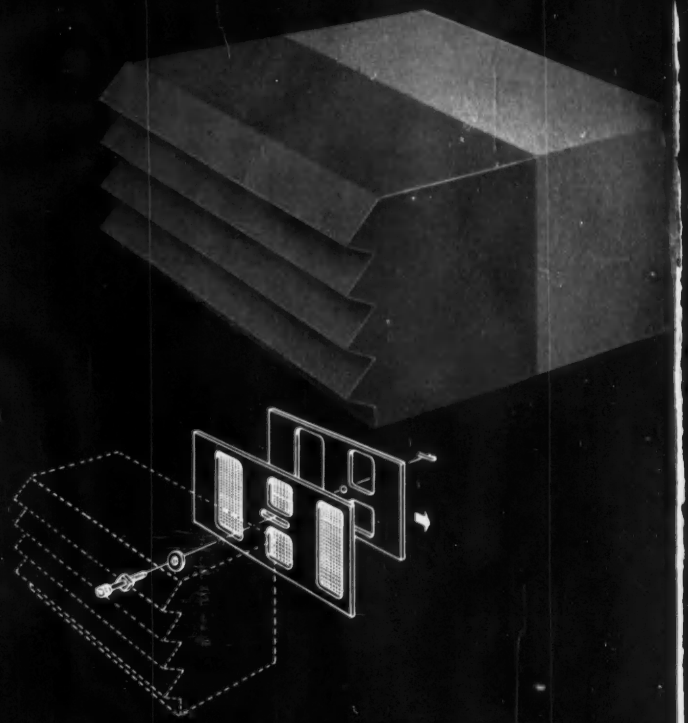

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